CURTIS'S

BOTANICAL MAGAZINE,

COMPRISING THE

Plants of the Royal Gardens of Kew,

AND

OF OTHER BOTANICAL ESTABLISHMENTS IN GREAT BRITAIN;

WITH SUITABLE DESCRIPTIONS;

BY

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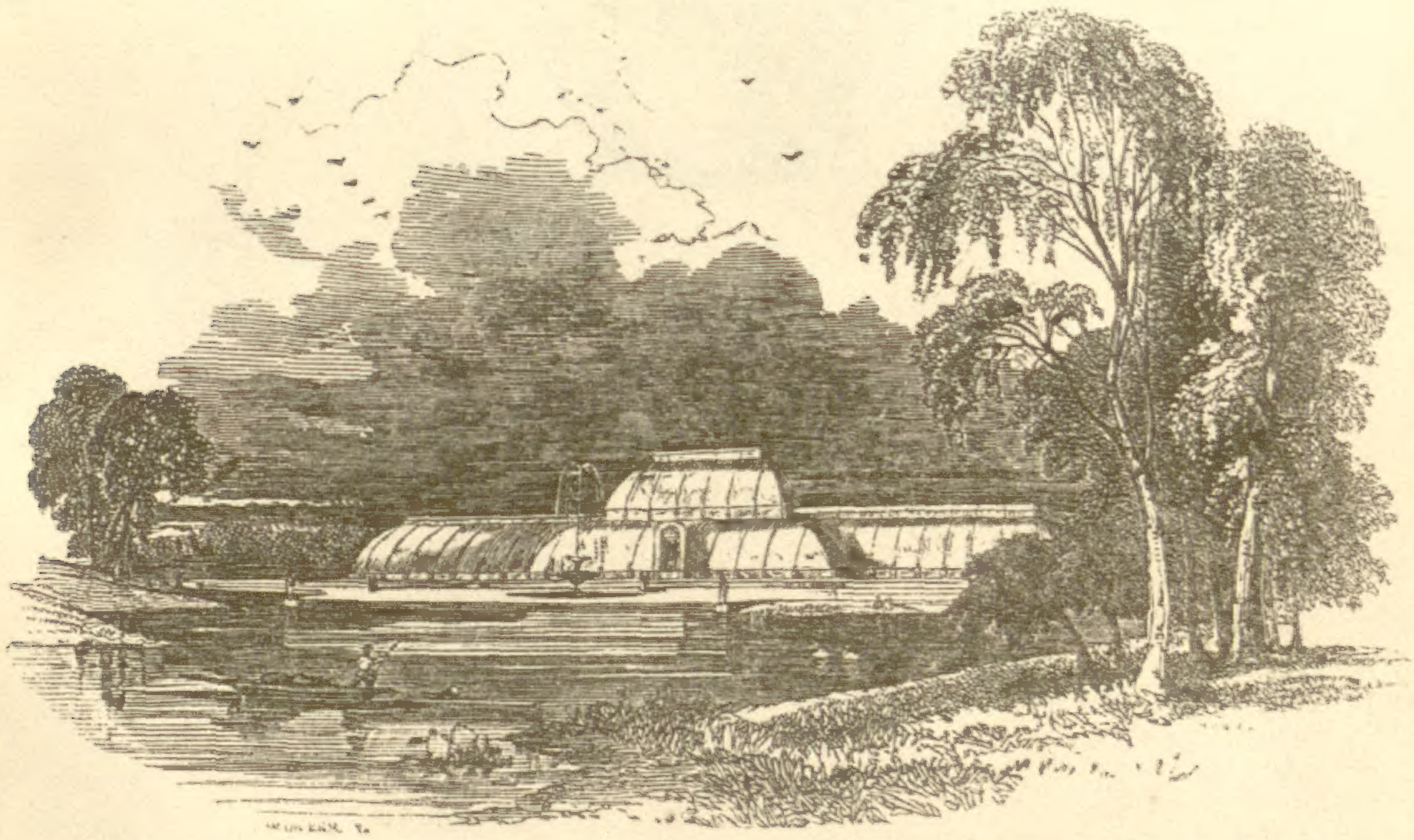
VOL. XII.

OF THE THIRD SERIES;

(Or Vol. LXXXII. of the Whole Work.)



"Not a flower
But shows some touch, in freckle, streak, or stain,
Of His unrivalled pencil."

LONDON:

LOVELL REEVE, HENRIETTA STREET, COVENT GARDEN.

1856.

MISSOURI
BOTANICAL
GARDEN.

JOHN EDWARD TAYLOR, PRINTER,
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TO

THE LADY DOROTHY NEVILL,

WHOSE CHOICE COLLECTION OF PLANTS AT DANGSTEIN, HANTS,

PLACES HER LADYSHIP

AMONG THE MOST EMINENT OF THE PATRONESSES OF

HORTICULTURE AND BOTANY,

The present Volume is Inscribed

BY HER LADYSHIP'S

FAITHFUL AND OBEDIENT SERVANT,

THE AUTHOR.

Royal Gardens, Kew,
December 1, 1856.

2.

Tab. 4891.

ÆSCHYNANTHUS FULGENS.

Flame-coloured Æschynanthus.

Nat. Ord. Cyrtandraceæ.—Didynamia Gymnospermia.

Gen. Char. (*Vide supra*, Tab. 4236.)

Æschynanthus *fulgens;* foliis oblongo-lanceolatis acuminatis carnosis integerrimis, petiolo brevi crassissimo, pedicellis unifloris in umbellam terminalem plurifloram dispositis, calycis ampli laxi tubuloso-infundibuliformis limbo 5-lobo, lobis æqualibus acutis erecto-patentibus, corollæ calycem triplo excedentis clavatæ (coccineæ) tubo gracili limbo obliquo, staminibus styloque exsertis.

Æschynanthus fulgens. *Wall. Cat. n.* 797. *De Cand. Prodr. v.* 9. *p.* 261.

Our volumes are rich in species of *Æschynanthus* not less beautiful than the present: witness our Tab. 3845, *Æ. grandiflorus*, Don; Tab. 4261, *Æ. Lobbianus*, Nob.; Tab. 4264, *Æ. pulcher*, De Cand.; and Tab. 4503, *Æ. Javanicus*. Of all these, our present species is the most closely allied to the first-mentioned, viz. *Æ. grandiflorus*, especially in the singularly clavate form of the corolla: but in that species the arrangement of the flowers is very different; the tube of the corolla is comparatively short and broad, filling up as it were the entire calyx, and that has long acuminated appressed lobes,—to say nothing of the leaves, which are narrow and serrated. The species here figured is a native of Tavoy, whence we have specimens from Dr. Wallich, gathered by M. Gomez. For our specimens here figured we are indebted to the Messrs. Veitch, of the Exeter and Chelsea Exotic Nurseries (with whom it flowered in October, 1855), having been collected at Moulmein by Mr. Thomas Lobb. It seems to blossom freely, and few plants can exceed it in beauty, especially if suspended in a wire or small trellis basket.

Descr. *Stems* thick, terete, straggling, slightly branched. *Leaves* opposite, large, bright and deep green, thick, fleshy, oblong-lanceolate, approaching to ovate, acuminate, entire, a little carinated at the back; *nerves* obsolete, or only visible in the older

leaves, where the parenchyma is a little shrivelled, and where the edge is somewhat sinuated, scarcely dentate. *Flowers* several, collected into a terminal umbel, without bracteas, or with only a pair of small leaves at the base. *Pedicels* short, single-flowered. *Calyx* longer than the pedicels, between cylindrical and infundibuliform, lax (much wider than the tube of the corolla), its *limb* erecto-patent, of five equal acute rather small lobes. *Corolla* thrice as long as the calyx, club-shaped: that is, with the tube long and slender, gradually enlarged and widened upwards, laterally compressed, contracted at the five-lobed and somewhat two-lipped limb, lower lobe longer and reflexed: colour of the corolla bright crimson, the lobes each marked with black lines. *Stamens* didynamous, much exserted: the *anthers* joined in pairs. *Style* also much exserted. *Stigma* much dilated.

Fig. 1. Calyx and pistil. 2. Pistil and hypogynous cup:—*magnified*.

Erratum.—It should have been said under Tab. 4886, *Dendrobium MacCarthiæ*, that the figure and description were communicated by Mr. Thwaites, who has recently sent living plants to Kew, which have not yet had time to flower.

1892.

2.

W. Fitch, del et lith

Vincent Brooks imp

Tab. 4892.

LAPAGERIA ROSEA : *var.* ALBIFLORA.

Rose-coloured Lapageria : white-flowered var.

Nat. Ord. Smilaceæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4447.)

Lapageria *rosea*.

Lapageria rosea. *Ruiz et Pav. Fl. Peruv. et Chil. v.* 3. *p.* 65. *t.* 297. *Spreng. Syst. Veget. v.* 2. *p.* 99. *Kunth, Enum. Plant. v.* 5. *p.* 284. *Walp. Ann. Bot. Syst. v.* 3. *p.* 646.

Var. *albiflora;* floribus albis basi subroseis immaculatis. (Tab. 4892.)

In our anxiety to figure the *Lapageria rosea* in the 'Botanical Magazine' as soon as the species was introduced to our gardens by Mr. Wheelwright and the Messrs. Veitch, of the Exeter and Chelsea Exotic Nurseries, we made use, as then acknowledged, of a coloured drawing by Mr. William Lobb, executed in Chili from the plant *in loco natali;* and it was no small satisfaction to us to find, when the plants flowered with us, as they do abundantly in a cool and moist greenhouse (the temperate Fernery), that the colouring was extremely accurate; that is, as regards the usual state of the plant. Ruiz and Pavon, however, had observed that the flowers vary from "rose to rose-crimson."

In the Jardin des Plantes, at Paris, a fine healthy plant sent by M. Abadi from Chili, has produced large white flowers, approaching indeed to cream-colour, with a tinge of rose at the base: the flowerstalks each two- to three-flowered. Our artist being in Paris at the time, Professor Decaisne obligingly granted permission for a figure to be taken of it for publication in this Magazine.

The species being fully described under our Tab. 4447, we need not here say more than that besides the greater size and different colour of the flowers, the bracts are larger and greener upon the peduncles, covering them for their entire length.

Fig. 1. Pistil:—*nat. size.* 2. Transverse section of ovary:—*magnified.*

January 1st, 1856.

W Fitch del et lith

Vincent Brooks Imp

TAB. 4893.

WEIGELA AMABILIS.

Wrinkle-leaved Weigela.

Nat. Ord. CAPRIFOLIACEÆ.—PENTANDRIA MONOGYNIA.

Gen. Char. (*Vide supra*, TAB. 4396.)

WEIGELA *amabilis;* ramulis petiolis foliorum costis pubescenti-hirtis, foliis ovatis obovatisve acuminatis reticulatim rugosis inferne in petiolum longiusculum attenuatis, floribus axillaribus solitariis vel plurimis terminalibus umbellatis subsessilibus vel pedicellatis, pedicellis bibracteolatis, laciniis calycinis linearibus erectis appressis ovariisque hispidis, corollæ tubo elongato limbi lobis sinuato-crenatis.

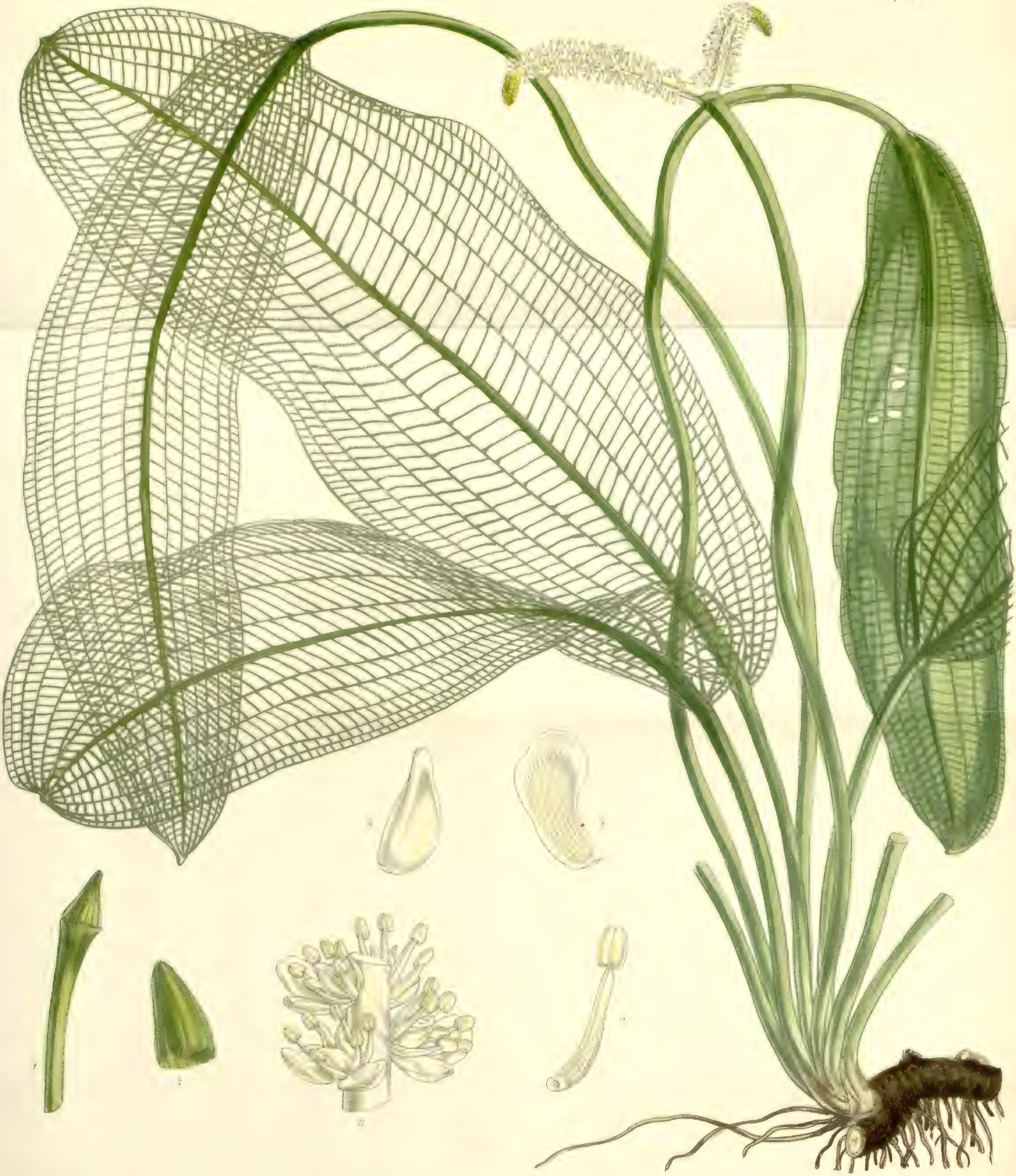
WEIGELIA amabilis. "*Planch. Fl. des Serres, v.* 8. *p.* 855."

At our Tab. 4396, under *Weigela rosea*, we expressed our doubts as to the propriety of separating *Weigela*, Lindley (Calysphyrum, *Bunge*), from *Diervilla*, with which Siebold and Zuccarini, and, following them, Walpers, unite it; and doubting, too, as to *W. rosea* being distinct from *D. florida*, Sieb. et Zucc.; and, in reply to the query of a correspondent in the 'Gardeners' Chronicle' (vol. for 1853, p. 536), it is answered: "We are uncertain how many species of *Weigela* are known to botanists. In the garden we have *W. rosea* (just alluded to), *W. Minderdorfiana*, *W. amabilis*, and *W. lutea;* but the last is often an *alias* of *Diervilla lutea*, and we do not know how far the others are distinct. In books also occur *W. pauciflora* and *florida:* but the latter is very nearly if not quite the same as *rosea*." We have now to consider the question of the distinctness of the one under consideration from the last mentioned. Certainly, with flowering species of each in our hand, the eye may readily distinguish between them; but with the exception of the stronger reticulation of the leaves of the present plant, and the undulately crenate lobes of the corolla, there is no character on which reliance can be placed: such as they are, we have included them in the specific character; and we regret we have not the opportunity of consulting the 'Flore des Serres,' where this species is established by M. Planchon. It is, we presume, like *W. rosea*, a native of China

or Japan, but by whom introduced to Europe, we have no means of knowing. For our plants we are indebted to Messrs. Lowe, of the Clapton Nursery.

Descr. A shrub, probably equally hardy with *Weigela rosea* (though our plant blossomed in a cool frame in May), and with entirely the same habit: the younger branches and foliage are more or less hairy. *Leaves* opposite, larger than those of *W. rosea;* rather obovate than ovate, acuminated, serrated, tapering below into a moderately long petiole. The surface is much and reticulately veined, with impressed lines above, prominent on the nerves beneath. *Flowers* sessile, or on very short, simple *petioles*, bearing two opposite, minute *bracts*, solitary in the axils of the upper leaves, or in a terminal, many-flowered *umbel*, of beautiful rose-coloured *flowers*. *Calyx* hairy, the *tube* adherent with the ovary, so slender as to resemble a peduncle, angular: *limb* of five, erect, linear, appressed segments, unequal in height. *Corolla* with the *tube* narrow, scarcely longer than the segments of the *calyx:* the *limb* campanulate, cut into five, nearly equal, spreading, waved and crenated, obtuse, broadly ovate lobes: the *tube* is within hairy, and has a clavate, short, downy, conspicuous *gland*, attached to the base on one side. *Stamens* inserted at the top of the tube, shorter than the limb: *anther* oblongo-sagittate. *Style* shorter than the corolla, included. *Stigma* two- to three-lobed, lobes downy.

Fig. 1. Calyx and pistil. 2. Corolla laid open. 3. Gland from the inner base of the tube of the corolla. 4. Transverse section of ovary:—*magnified.*



Fitch. del et lith

Vincent Brooks Imp

Tab. 4894.

OUVIRANDRA FENESTRALIS.

Water-Yam, or Lace-leaf.

Nat. Ord. Juncagineæ.—Hexandria Monogynia.

Gen. Char. Ouvirandra, P. Th. *Flores* hermaphroditi. *Sepala* 2 (unilateralia —3, *Dene.*), colorata, deciduа. *Stamina* 6, persistentia; *filamentis* subulatis, inferne dilatatis; *antheris* basi affixis, bilocularibus, lateraliter dehiscentibus; *polline* acute ellipsoideo. *Ovaria* 3–4, lageniformia, in stylum brevem, *stigmate* obliquo subapicali, facie interna notatum desinentia, unilocularia, 2–6-ovulata; *ovulis* basi affixis, adscendentibus, anatropis. *Folliculi* rostrati, abortu 1–3-spermis, introrsum dehiscentes. *Semina* exalbuminosa, testa herbacea, membrana interiore tenui. *Embryo* rectus, ascendens, *cotyledone* crassa foliacea v. excavata *plumulam* maximam bifoliam amplectente.—Herbæ *aquaticæ, tuberculosæ*, caudice *elongato ramoso*, foliis radicalibus *venosis submersis*. Scapi *elongati*, spicas *singulas binas ternasve gerentes*. Spatha *caduca*. *Edgew.*

Ouvirandra *fenestralis*; foliis submersis sublonge petiolatis oblongis fenestratis mucronulatis, nervis longitudinalibus apice confluentibus, spicis binis.

Ouvirandra fenestralis. *Poiret, Encycl. Bot. Suppl. v. 4. p. 237. Decaisne in De Lessert's Icones, v. 3. p. 62. t. 99. Kunth, Enum. Plant. v. 3. p. 592. Edgeworth, on Aponoget. etc., Hook. Lond. Journ. Bot. v. 3. p. 405.*

Hydrogeton fenestralis. *Pers. Syn. Pl. v. 1. p. 400. Spreng. Syst. Veget. v. 2. p. 162.*

More than thirty years ago, through the kindness of the late Charles Telfair, Esq., of Mauritius, our Herbarium was enriched by fine, dried, flowering specimens, and our Museum by specimens in alcohol, of this most remarkable plant, gathered by Professor Bojer in Madagascar. Some thirty years previous to that the plant was first detected in Madagascar by Aubert du Petit-Thouars, who described the genus in his 'Nov. Gen. Plant. Madagasc.,' a work to which we are sorry we have not at this time access. It was impossible not to desire earnestly that so very remarkable and so very curious a plant, whose leaves are constituted by a series of the most beautiful network, without parenchyma, reduced in short to its vascular reticulated tissue, should be in cultivation in this country, and our wishes have at length been crowned with success. The Rev. William Ellis wrote to

me on the 9th of August of this year (1856) from Hoddesdon, Herts, with the following gratifying intelligence:—"I have just returned from a voyage to Madagascar, and, while there, was enabled to obtain some plants of the *Ouvirandra fenestralis*, which I have been able, *with much ease*, to bring safely home. As M. Bojer, at Mauritius, told me you were anxious to possess a plant, and as he has not been able to procure it living, I shall have much pleasure in sending a plant to Kew for your acceptance, or bringing one over soon myself." Mr. Ellis has been better than his word: he has presented us with two plants, in September,—one of them, as here represented, in a flowering state. The remainder of his plants are placed in the hands of Messrs. Veitch and Sons, Exotic Nurseries, Exeter and Chelsea: and we shall be surprised if all who are curious in horticulture and botany do not possess themselves of so beautiful and curious an object, and which is cultivated with the greatest ease in a stove (or possibly a warm greenhouse), in a shallow pan of rain-water, including a moderate quantity of earth for the roots to feed upon,—being entirely aquatic, the leaves even submerged; and we cannot doubt but it may be cultivated in glass Aquaria, and even in a glass jar placed in the drawing-room, as is done with the *Vallisneria spiralis*, etc.

As Mr. Ellis has favoured us with the particulars of his obtaining the plant, we shall quote his own words:—"The most rare and choice acquisition which I made in Madagascar, during this visit, was the beautiful aquatic plant, *Ouvirandra fenestralis*, which Sir W. J. Hooker designates 'one of the most curious of Nature's vegetable productions.' Dr. Lindley had drawn my attention to it and other Madagascar plants before my departure, and had shown me a drawing of it in the work of Du Petit-Thouars. At Mauritius, M. Bojer, a distinguished naturalist, who had formerly resided in Madagascar, very frankly and kindly informed me of the localities in which the plants I was anxious to obtain were most likely to be found. From the work of Du Petit-Thouars, in M. Bojer's possession, I copied the *Ouvirandra*, in a size rather larger than the engraving, and by exhibiting this to the natives, at length found one man who knew where it grew; his master, who had shown me many acts of kindness, allowed him to go and search for it, and after two or three days he returned, saying he had found the plant growing in a stream of water, but could not get it, owing to the number of crocodiles in the stream: the late rains, it was said, had made these animals more numerous than usual at that particular place. At length however the man brought me a fine lot of plants in excellent condition, and I was happy to reward him for his trouble, and to take them immediately under my own charge.

"The natives describe this plant as growing on the margin

of running streams. The root, or rhizome, is about an inch in thickness, and six or nine inches long, often branching in different directions like the roots of ginger or turmeric, but in one continuous growth, not a succession of distinct formations, attached at the termination of one and the commencement of another. The root is composed of a white fleshy substance, apparently without large or tough fibres, and is covered with a rather thick light-brown skin. The plant is attached to the sides of the streams in which it grows by numbers of long, fine, fibrous radicles, which penetrate and adhere firmly to the loam or clay of the banks. Entangled amongst these roots were large quantities of decayed leaves, and other vegetable substances, from which the plant may probably derive some portion of its nutriment, though, from the bubbles of air frequently found under the leaves, it would seem to possess the property of decomposing a portion of the water in which it grows. I was informed that it also grew in places which were dry at certain seasons of the year; that the leaves then died down, but the root buried in the mud retained its vitality, and when the water returned fresh leaves burst forth. The natives spoke of it as tenacious of life, and said that whenever the earth around, even the smallest portion of it, remained moist, that portion would put forth leaves when again covered with water.

"This plant is valuable to the natives, who at certain seasons of the year gather it as an article of food, the fleshy root, when cooked, yielding a farinaceous substance resembling a yam. Hence its native name, *Ouvirandrano*,—literally, *Water-yam*, or yam of the water: *ouvi*, in the Malagasy and Polynesian languages, signifying *yam;* and *rano*, in the former, signifying *water*.

"The *Ouvirandra* is not only a rare and curious, but a singularly beautiful plant, both in colour and structure. From the several crowns of the branching root, growing often nearly a foot deep in the water, a number of graceful leaves, nine or ten inches long and two or three inches broad, rise on slender stalks, and spread out horizontally, *just beneath the surface of the water*. The flower-stalk rises from the centre of the leaves, and the branching or fork-like inflorescence is curious; but the structure of the leaf is peculiarly so, and seems like a living fibrous skeleton, rather than a perfect leaf. The longitudinal fibres extend in curved lines along its entire length, and are united by thread-like fibres or veins crossing them at right angles from side to side at short distances from each other. The whole leaf looks as if composed of fine tendrils, wrought after a most regular pattern, so as to resemble a piece of bright-green lace or open needlework. Each leaf rises from the crown on the root like a short, delicate-looking, pale-green, or yellow fibre, gradually un-

folding its feathery sides, and increasing in size as it spreads beneath the water. The leaves in their several stages of growth pass through almost every gradation of colour, from pale yellow to a dark olive, becoming before they finally decay brown or nearly black; while air-bubbles of considerable size frequently appear under the full-formed and healthy leaves. It is scarcely possible to imagine any object of the kind more attractive than a full-grown plant, with its dark-green leaves forming the limit of a circle two or three feet in diameter, and presenting in the transparent water, within that circle, leaves in every stage of development, both as regards colour and size. Nor is it less curious to notice, that these slender and fragile structures, apparently not more substantial than the gossamer and flexile as a feather, still possess a tenacity and firmness which allows the delicate leaf to be raised by the hand to the surface of the water without injury.

"I succeeded in conveying this plant safely to Mauritius, where it was preserved for more than a year, and seemed to thrive best in running water, at a temperature of about 74°. I was happy to present specimens of it to M. Bojer, and to Mr. Duncan, the Director of the Royal Gardens at Pamplemouses. At the Cape of Good Hope, Mr. Gibbon kindly took charge of it during my absence on a journey of more than five months into the interior, and I willingly left a plant of it in the Botanical Gardens there. Since my return to England, I have had much satisfaction in presenting specimens of this rare plant to the Royal Gardens at Kew, to the Gardens of the Horticultural Society at Chiswick, and to those at Regent's Park."

Persoon, or probably Richard in Persoon's 'Synopsis,' observed of this plant, that it was nearly allied to *Aponogeton*; and no wonder: the habits and general structure, edible roots, direction of the nerves of the leaf, hinate spikes, dispalous perianth, stamens and pistils, are common to both. But the able Decaisne refers *Ouvirandra* to *Naiadeæ*; Kunth, to the *Genera Florialibus affinia*; Endlicher places it next to *Saurureæ*, as a "*genus dubium*," standing however next to *Aponogeton* (in *Saurureæ*); Lindley in *Junagineæ*; and Mr. Edgeworth, in a Memoir, above quoted, on *Aponogeton* and the allied genera (1844), shows that *Ouvirandra* can scarcely be distinguished from *Aponogeton*, or, if it is kept distinct, certain species of *Aponogeton* must rank with it: and he accordingly draws up a slightly modified character of *Ouvirandra*, to which he also refers four species of *Aponogeton* (viz. *A. crispus*, *A. pusillus*, *A. Macraei*, and *A. undulatus*). M. Planchon, in his 'Observations sur le Genre *Aponogeton* et sur ses Affinités naturelles' (Ann. Sc. Nat. troisième série, vol. i. p. 107. an. 1844), suggests that *Aponogeton* should form a suborder of *Alismaceæ*, or probably a new

order, *Aponogetaceæ*, and that *Ouvirandra* should rank with it. Perhaps, indeed, Du Petit-Thouars was led more especially to constitute a new genus of this in consequence of the remarkable organization of the foliage: but, curious and general as is the fenestrate character in the present species (and probably in the *O. Hendelotii*, Kth.) from *Senegambia*, briefly noticed by Decaisne, *l.c.*; yet, in the *O. fenestralis*, we find occasionally a leaf (as in the annexed figure) wholly or partially entire, that is, having the areolæ of the nerves filled up with parenchyma: and Decaisne has described and figured a second species of *Ouvirandra*, of Madagascar (*O. Bernieriana*), filled up with parenchyma, "*foliis plenis*," exactly as in any ordinary *Aponogeton*. Our flowering plant produced no seeds.

Descr. Mr. Ellis has in the above account described so much of this plant, that but little remains for us to notice. The *root* with us has not shown "tubercles," but consists of a horizontal, branching *caudex* or *rhizome*, emitting numerous descending fibres from below; and above, from different points, clusters or fascicles of long-petiolated *leaves*, which spread more or less horizontally beneath the surface of the water; they are oblong-obtuse at the apex, with a mucro, and more or less obtuse at the base: this blade of the leaf has a strong midrib; the rest is wholly formed, and from the earliest stage of development, of what appear to be longitudinal nerves meeting at the point, and connected by transverse nerves or nervelets, of a pale yellowish-green colour when young, brighter and deeper green when fully formed, and becoming dark olive-green in age. If these nerves and nervelets are seen under a microscope, they will be found to consist of very slender nerves surrounded by a portion of parenchyma* on each side; sometimes the parenchyma is extended, so that the open portion is of an oval form, and in some rare instances, as above observed, an entire leaf is formed of parenchyma traversed by the slender nerves. The *petioles* vary in length from a finger's length to a span long, and are terete, slightly sheathing at the base. *Scape* from the midst of the petioles, exactly resembling the petiole, and probably varying in length according to the depth of water, for the flower-spikes attain to the surface of the water. Before the *spikes*, two in number, are developed, the dilated apex of the scape bears a small, calyptriform, striated, deciduous lid,† which falls off en-

* The cells of the parenchyma are very delicate, full of fluid and granules of green chlorophyll. The nerve consists of a few long, green, tubular cells, surrounding several very slender spiral tracheæ in the main ribs, but a single one in the nervelets. There are no air-cells in the substance of the leaf, or in the apex of the petiole.—*J. D. H.*

† Mr. Ellis called my attention to this, and made a sketch of it, sending me the fallen lid; for it had fallen before the plant arrived at Kew.

tire, and probably consists of two bracts united, leaving a scar at the base of the spikes, which latter rapidly attain their full size, about two inches long. *Rachis* terete, acuminated, bearing rather closely placed, nearly colourless *flowers* on all sides. *Perianth* (or perhaps bractoles*) of two membranous, obovate, whitish scales, inserted on the under side of the flower. *Stamens* six. *Filaments* about as long as the sepals, rather thick, acute at the point of insertion of the anther. *Anther* oval, erect, two-celled, *cells* opening laterally and longitudinally. *Ovaries* three, ovate, tapering into a short, slightly curved style.

* Decaisne has the following note:—"An, propter florum fabricam, stamina pro floribus masculis distincta, et ovaria pro femininis centralibus, perianthiique squamæ pro bracteis habenda?"

Fig. 1. Extremity of a scape, before the spikes are developed, and while yet covered by the calyptriform bract:—*natural size.* 2. Lid or bract, fallen off. 3. Portion of a spike with flowers. 4. Sepal (or bractole). 5. Stamen. 6. Pistil:—*all except fig.* 1 *more or less magnified.*

1
2

Tab. 4895.

CLIVIA Gardeni.

Major Garden's Clivia.

Nat. Ord. Amaryllidaceæ.—Hexandria Monogynia.

Gen. Char. Perigonium superum, corollaceum, tubuloso-infundibulare, 6-partitum, irregulare, deciduum; tubo brevi, tereti; laciniis imbricatis; exterioribus lineari-lanceolatis; interioribus paulo longioribus, spathulatis ex his inferiore magis producta, apice leviter recurvata, ex illis superiore breviore, convexo-curvata, cæteris rectiusculis. *Stamina* sex, summo tubo inserta, decurrentia, erecta; petalina paulo longiora, parum exserta. *Filamenta* filiformia. *Antheræ* oblongæ, dorso supra basin bifidam affixæ, erectæ (versatiles, *Lindl.*). *Ovarium* inferum, subovatum, obsolete trigonum, triloculare; *ovula* 6–7 in quolibet loculo, angulo interno affixa, biseriata, hemianatropa. *Columna* stylina filiformis, teretiuscula, erecta, stamina superans. *Stigma* trifidum; laciniis patulo-recurvatis. *Bacca* abortu monosperma (sub-6-sperma, *Hook.*). *Semen* adscendens, subgloboso-compressum; testa carnosa, areolata; hilo et chalaza lateralibus, raphe brevi elevata conjunctis. *Embryo* axilis, albumine carnoso dimidio brevior; extremitate radiculari hilo parallele contigua infera.—Herba *acaulis, Capensis.* Bulbus *imperfectus; fibris fasciculatis, carnosis, tuberoso-incrassatis.* Folia *erebra, disticha, lorata, rigida, persistentia.* Scapus *plano-convexus, solidus, apice umbellato-multiflorus.* Spatha *polyphylla, marcescens.* Flores *pedicellati, bracteolis linearibus distincti, nutantes, luteo-crocei, apice virescentes.* Semina *sæpe in fructu germinantia. Kunth.*

Clivia *Gardeni;* foliis obtusiuscule acuminatis, umbella sub-14-flora, floribus falcato-curvatis, sepalis apice patentibus.

Clearly a species of *Clivia*, Lindl. (Imantophyllum, *Hook.*), and perfectly distinct from the only hitherto known species of this African genus, figured at our Tab. 2856. The leaves are longer, and they taper gradually into an acuminated but not sharp point; the umbel has fewer flowers, but these flowers are twice the size of *C. nobilis*, and more brightly coloured, very much curved or falcate, and the apices of the sepals, instead of being incurved so as to form a very contracted mouth, are spreading, thus forming an infundibuliform corolla. *Clivia nobilis* is an inhabitant of the Albany Tracts, near the Great Fish River, South Africa; *C. Gardeni* was discovered in the Natal Colony by our excellent friend Major Garden, and by him introduced to the Royal Garden of Kew. Treated as a greenhouse plant, it flowers finely in the winter months, and continues for several weeks in blossom.

January 1st, 1856.

Descr. *Root* exactly as in *C. nobilis*, of several stout, fleshy *fibres*. *Leaves* distichously inserted, numerous, all radical, the bases sheathing: the blade one and a half or two feet long, gradually tapering towards the extremity into a rather blunt point. *Scape* erect, very much and uniformly compressed, flat on one side, slightly rounded (subsemiterete) on the other. *Bracts* few, small, membranaceous, among the pedicels. *Umbel* of about fourteen *flowers*. *Pedicles* two inches or more long, erect or erecto-patent, curved upwards. *Flowers* full two inches long, independent of the ovary, very much falcate or curved downwards, of a dull orange or brick-red colour, gradually passing upwards into yellow, and that again into the green of the upper extremity: their shape is infundibuliform, curved: the sepals (united only at the base) overlap each other for their whole length, except at the apices, which are patent, and thus give their flower a very different appearance from that of *C. nobilis*. The *stamens* are inserted above the base of the perianth, longer than it: the *filaments* white, curved: *anthers* oblong, yellow. *Ovary* subglobose, but three-lobed or angled. *Style* longer than the stamen, much inserted beyond the sepals. *Stigma* trifid.

Fig. 1. Pistil and stamens. 2. Pistil:—*magnified*.

Tab. 4896.

TECOMA fulva.

Fulvous-flowered Tecoma.

Nat. Ord. Bignoniaceæ.—Didynamia Angiosperma.

Gen. Char. *Calyx* campanulatus, 5-dentatus. *Corolla* tubo brevi, fauce dilatata, limbo 5-lobo subbilabiato aut æquali. *Stamina* 4, didynama, cum rudimento quinti; *antheræ* biloculares, loculis divergentibus. *Stigma* bilamellosum. *Capsula* bilocularis, bivalvis, septo valvis contrario. *Semina* imbricata, alata, transversa.—Arbores fruticesve, *sæpe scandentes*. Folia *opposita, digitata aut sæpius imparipinnata*. Flores *paniculati aut racemosi, sæpius terminales, flavi, incarnati aut albidi. De Cand.*

Tecoma *fulva;* fruticosa, ramis teretibus glabris junioribus subtetragonis villosis, foliis sparsis imparipinnatis multijugis, petiolo articulato inter pinnas anguste alato, foliolis cuneato-ovatis subsessilibus apice serratis junioribus villosis adultis glabris, racemis axillaribus 7–9-floris, pedicellis bibracteatis, calyce villoso (demum glabro) acute 5-dentato. *De Cand.*

Tecoma fulva. *Don, Gen. Syst. v.* 4. *p.* 224. *De Cand. Prodr. v.* 9. *p.* 224.

Bignonia fulva. *Cav. Ic. v.* 6. *p.* 58. *t.* 580.

There cannot be a question but that the handsome plant here figured is the *Bignonia fulva** of Cavanilles, till recently apparently only known to that author and to Louis Née, who is reported to have gathered it "in siccis arenosis portus Aricæ in confinio Peruviæ:" this is about latitude 18° 26′ south. Our flowering specimens were reared by Messrs. Veitch, of the Exeter and Chelsea Exotic Nurseries, and sent by them in November, 1855. We have herbarium specimens from various parts of Peru, gathered by Mr. Cuming (No. 932), Mr. McLean, Mr.

* A much more beautiful, indeed truly lovely and somewhat allied species of *Tecoma* is found in Chiloe by Captain King, by Mr. Bridges ("*Pil-pil*" of the natives, climbing up the trees to a height of forty or fifty feet), by Mr. W. Lobb (No. 474), and in the island of Huaffo by Dr. Eights. The flowers are quite tubular, apparently rich scarlet; the leaves pinnated, with oblong, subcoriaceous, slightly serrated leaflets, and a slightly winged rachis. This I cannot doubt is the *Tecoma? Guarume*, De Cand. (Bignonia alata, *Pav. MSS.*), although stated to be an inhabitant of Peru. De Candolle himself suspects that the locality given by Pavon is not correct.

February 1st, 1856.

Warszewicz, and from Bolivia by Mr. Pentland. Mr. G. Don, and, following him, De Candolle, appear to have done rightly in placing it in *Tecoma*, though it does not answer to the character "*corolla tubo brevi.*"

Descr. *Shrub* of an erect habit; *branches* rich purplish-brown, terete, glabrous, younger ones hairy. *Leaves* opposite, in outline linear-oblong, petiolate, impari-pinnate, with about twelve opposite, sessile, cuneate, grossly serrated, glabrous *leaflets*, and a terminal one; *petiole* slightly winged, contracted where the leaves are set on; *rachis* jointed, and each joint rather deeply winged; the younger *leaves* are slightly hairy. *Racemes* of flowers terminal, or on small axillary branches which arise from the upper leaves: the collective flowers constituting a rather large leafy *cyme*. *Pedicels* downy. *Calyx* glabrous (hairy, *Car.*), obovate, obscurely angled, cut into five, rather deep, triangular, acuminate, erect teeth. *Corolla* two inches long, red on the upper, tawny-yellow on the under side; *tube* cylindrical, but tapering much below and very slender, so as to be infundibuliform, slightly curved; the *limb* scarcely two-lipped, of five nearly equal, spreading, rounded lobes. *Stamens* four, included, didynamous, inserted at the faux of the corolla; *filaments* short; *anthers* of two, oblong, slightly divaricated, one-celled lobes, and having a soft curved mucro or spur terminating the connectivum; there is a small fifth *abortive stamen* lower down the tube. *Ovary* elongated, surrounded by a thick glandular *ring*. *Style* longer than the corolla. *Stigma* large, two-lipped.

Fig. 1. Calyx and pistil. 2. Ovary and glandular ring. 3. Anther. 4. Corolla laid open, showing the stamens:—*magnified.*

1897

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Tab. 4897.

ARALIA papyrifera.

Rice-paper Plant.

Nat. Ord. Araliaceæ.—Pentandria Pentagynia.

Gen. Char. Calyx tubo cum ovario connato, limbo supero, brevissimo, integro v. quinquedentato. *Corollæ petala* (4–) 5, disci epigyni margini inserta, libera, expansa. *Stamina* 5, cum petalis inserta, iisdem alterna; *filamenta* brevia; *antheræ* incumbentes, biloculares. *Ovarium* inferum, quinque-decemloculare. *Ovula* in loculis solitaria, pendula. *Styli* (2–) 5, divaricato-patentes; *stigmata* simplicia. *Drupa* baccata, costata, calycis limbo stylisque coronata, penta-decapyrena, *pyrenis* chartaceis, monospermis. *Semina* inversa. *Embryo* in apice albuminis dense carnosi brevis, orthotropus, radicula supera.—Arbores, frutices *v.* herbæ, *in America imprimis boreali, Japonica et Nova-Zelandia crescentes;* foliis *alternis, simplicibus, integris v. lobatis, digitatis, pinnatis, biternatis, bipinnatis supradecompositisve,* foliolis *integerrimis v. serratis,* petiolis *basi vaginantibus;* floribus *umbellatis,* umbellis *sæpe paniculatis. Endl.*

Aralia *papyrifera;* caule inermi erecto subsimplici fruticoso intus copiose albomedulloso, foliis præcipue ad apicem caulis longe petiolatis amplis 5-lobis subtus præcipue (junioribus totis) petiolisque stellato-subferrugineo-tomentosis, lobis lateralibus bilobis terminali trilobo omnibus acutis serratis, stipulis longissimis subulatis basi cum petiolo adnatis, umbellis subglobosis numerosis sessilibus bracteatis in paniculam amplam ramosam totam stellato-tomentosam dispositis, floribus tetrameris, calycis margine truncato integro, stylis 2 demum divaricatis.

Aralia papyrifera. *Hook. Journ. of Bot.* 1852. *p.* 53. *t.* 1, 2.

In the 'Journal of Botany' just referred to,—vols. ii. (1850), p. 27 and p. 250 (tabs. VIII. and IX.), vol. iv. (1852), p. 50 (tabs. I. and II.), and p. 347, vol. v. (1853), p. 79, and vol. vii. (1855), p. 92 and p. 281,—we have traced the progress of our knowledge respecting the origin, and the history, of the well-known "*Rice-paper*" of the Chinese, and mentioned the gentlemen through whom we obtained the needful information: which we have no space to repeat here. It is however to the kindness of the talented Governor of Hongkong, Sir John Bowring, and his son, J. C. Bowring, Esq., that we owe a more intimate acquaintance with the plant itself, and finally to the possession of the living and flowering plant. Our largest specimen, about five feet

high, placed in a damp stove, produced its fine panicles of blossoms in December, 1855; but, probably owing to the unfavourable season of the year, the flowers dropped off, almost as fast as they were developed, and bore no fruit. From dried specimens that had flowered at Hongkong in the Governor's garden, we can make up the deficiency as far as the immature fruit is concerned.

I must, however, be allowed to state that the plant is only here provisionally placed in *Aralia*. The character of the several genera of *Araliaceæ* are universally acknowledged to be very imperfect. A notice has been recently given, in the excellent 'Bulletin de la Société Botanique de France,' September, 1854, of an "Esquisse d'une Monographie des Araliacées, par MM. J. Decaisne et Planchon," published in the 'Revue Horticole,' nº du 16 Mars, 1854, pp. 104–109, a work to which unfortunately I have no access. The Bulletin indeed contains an enumeration of the nineteen genera into which the Order is divided by these gentlemen; but, though accompanied by certain characters, they are so brief that I can come to no satisfactory conclusion on the suitableness of any to our plant. From *Aralia*, as *hitherto* defined by authors, it differs in having two instead of five styles, and might hence be ranked with *Panax*: but *Aralia*, as characterized by MM. Decaisne and Planchon, should have two to five styles; it should however further have a calyx of five teeth (consequently five, and imbricated, petals), and the genus includes herbs, inhabiting temperate regions, with compound leaves; characters at variance with the species now before us. A well-grown plant of this must have a fine appearance, as described, in Hongkong—"seven feet high, with a circumference, of its terminal branches, of twenty feet, and throwing out twelve to fourteen panicles three feet long, drooping like magnificent plumes in regular form over the large dark palmate leaves." It seems to be a native exclusively of the Island of Formosa; and no botanist has ever seen the plant in its native locality. By the untiring exertions of Sir John Bowring he induced the Chinese traders to procure living plants, when on their voyage to that island for the cargo of stems to make their paper.

Descr. *Plant* unarmed, five to seven feet high. *Stem* branching above, and from two to three, or at most four inches in diameter, forming very little wood, filled with the most exquisitely white pith, of which the famous "*Rice-paper*" of China is made, as detailed in the journal above quoted. Young leaves and branches and whole inflorescence entirely covered with copious, stellated, more or less thick and deciduous down; upper surface of the foliage at length glabrous. Fully grown *leaves* sometimes a foot long, cordate, five- to seven-lobed; lobes acute, serrated, sinus very deep; texture soft and rather flaccid. *Petioles* very

long, terete, furnished at the base with two, long (two inches in length), soft, subulate, erect *stipules*. *Panicles* from the extremity of the stem or branches and rising above them, then nodding, one to three feet long; *branches* all with subulate *bracts*, as well as the terminal and sessile, capitate *umbels*, which are arranged alternately on the ultimate branches. *Flowers* on short pedicels, polygamous, tetramerous. *Ovary* turbinate, woolly: margin of the calyx obsolete. *Petals* four, ovate, concave, acute, valvate, woolly on the outside. *Stamens* four, alternate with the petals, incurved; *anthers* oval, two-celled, rather large. *Styles* two, at first erect and slightly incurved, at length (in fruit) divaricated. *Stigma* small, capitate. The *stylopodium* is depressed and surrounded by an elevated, waved, fleshy *ring*. *Fruit* in the dry state nearly black, scarcely mature, subglobose, obscurely didymous, laterally, but moderately, compressed, smooth, crowned with the fleshy ring just mentioned, and the divaricating styles.

Fig. 1. Tuft of stellated hairs. 2. Flower. 3. Ovary from the same. 4. Umbel of scarcely mature fruits (*natural size*), taken from a dried specimen. 5. Single fruit from the same:—*all but fig.* 4 *more or less magnified*.

TAB. 4898.

DENDROBIUM BIGIBBUM.

Double-spurred Dendrobium.

Nat. Ord. ORCHIDEÆ.—GYNANDRIA MONANDRIA.

Gen. Char. (*Vide supra*, TAB. 4755.)

DENDROBIUM (§ Dendrocoryne) *bigibbum;* caulibus elongatis apice 3–5-phyllis, racemis erectis elongatis dissitifloris, petalis subrotundis sepalis duplo latioribus, labelli trilobi lobis rotundatis medio cristato basi gibboso, sepalis lateralibus in calcar productis. *Lindl.*

DENDROBIUM bilobum. *Paxt. Fl. Garden, v.* 3. *p.* 25. *n.* 491. *fig.* 245 (*wood-cut only*).

A species of *Dendrobium* with very handsome flowers; but the long, slender, bare pseudo-bulbous stems, and few and narrow sparse leaves, are great drawbacks to the general beauty of the plant. We are indebted for the specimen here figured to Mr. C. Loddiges, in November, 1855; he had received the plant from Dr. Thomson, who found it on Mount Adolphus, Torres' Straits, on the north-east coast of New Holland. In consequence of this tropical locality, it requires greater heat in the cultivation than most Australian *Orchideæ*. A drawing, made on the spot, and dried specimens show that from ten to twelve flowers are sometimes produced upon one peduncle.

DESCR. *Pseudo-bulbs* stem-like, long, slender, fusiform, a span or more in length, the younger ones clothed with green, sheathing, foliaceous *scales*, and at the extremity bearing two to four or five narrow, linear-oblong, subacuminated, very obscurely striated *leaves*. The *older* stems or pseudo-bulbs are swollen at the very base, and are sheathed throughout the length with pale, brownish, membranaceous, striated *scales*, and have no leaves. From these older stems the *peduncle* arises from near the apex, and is about as long as the stem, erect, in the present instance, two- to ten- or twelve-flowered. *Flowers* deep lilac. *Sepals* ovate, spreading; two lateral ones terminating below in a short, blunt, curved spur; above this spur is a gibbosity, oc-

casioned by the like swelling at the base of the lip: from the presence of this and the spur is derived the specific name *bigibbum*. *Petals* large, nearly orbicular, horizontally patent. *Lip* deeper-coloured than the rest of the flower, three-lobed: *lateral lobes* large, incurved; *middle lobe* moderately reflexed, retuse at the apex: the disc has a large, elevated, white *crest*, papillose for the greater part of its length: the base is decurrent, and forms a gibbosity. *Column* large, compressed, grooved, the back closely united with the sepal, the *clinandrium* only standing a little forward.

Fig, 1. Side view of the lip, and spur of the sepals. 2. Front view of the lip. 3. Column. 4. Pollen-masses.

Tab. 4899.

APHELANDRA variegata.

Variegated Aphelandra.

Nat. Ord. Acanthaceæ.—Didynamia Angiospermia.

Gen. Char. Calyx 5-partitus, inæqualis. *Corolla* hypogyna, ringens, labio superiore subfornicato, inferioris tripartiti laciniis lateralibus multo minoribus. *Stamina* 4, corollæ tubo inserta, inclusa, didynama; *antheræ* uniloculares, muticæ. *Ovarium* biloculare, loculis biovulatis. *Stylus* simplex; *stigma* bifidum. *Capsula* teretiuscula, bilocularis, tetrasperma, loculicide bivalvis, valvis medio septiferis. *Semina* compressa, retinaculis subtensa.—Frutices *Americæ tropicæ;* foliis *oppositis;* spicis *axillaribus et terminalibus, tetragonis;* bracteis *oppositis, submembranaceis,* bracteolis *angustis;* corollis *speciosis, rubicundis* (*vel flavis*). *Endl.*

Aphelandra *variegata;* foliis brevissime petiolatis ovato-lanceolatis venis inferne albo-lineatis, spicis simplicibus incrassatis subtetragonis, bracteis ellipticis obtusis integerrimis aurantiacis carinatis, corollæ flavæ tubo valde elongato labiis subæqualibus superiore conduplicato inferiore trifido, laciniis lateralibus vix minoribus, sepalis oblongis acutis.

Aphelandra variegata. *Morel, in Fl. des Serres, v.* 10. *t.* 981.

Received from the Messrs. Veitch, of the Exotic Nurseries, Exeter and Chelsea. It is a native of Brazil, and is certainly an extremely handsome plant, worthy of a place in every stove: its foliage is ample and striking; and the large elongated spikes resemble a narrow pine-cone, but are of the richest orange-red, from the scales of which protrude the bright yellow flowers; and, in addition, its flowering season with us is in the dead of winter. It requires the same mode of treatment as the *A. aurantiaca*, Lindl., figured at our Tab. 4224, which it much resembles, but there are the following remarkable differences in our present plant:—Leaves larger, longer, and on very short petioles, with white lines at the base of the veins. Scales of the spike elliptical, obtuse, entire, coloured; flowers much smaller, fewer expanded at a time, uniformly and invariably yellow, with the lateral segments of the lower lip as long and nearly as broad as the central one; calyx much smaller and of a different shape.

Descr. Our *plants* are about a foot and a half high, mode-

rately branched, everywhere glabrous. *Leaves* opposite, between ovate and lanceolate, slightly waved, moderately acuminate, entire, strongly ribbed, the ribs or veins generally with a white streak at the base: *petioles* very short, thick, dilated or winged at the margin. *Spikes* terminal, strobiliform, almost a span long, tetragonous, formed of closely imbricated carinated *scales*, in four ranks, of a rich reddish-orange colour, elliptical, obtuse, entire, uppermost one the narrowest, lowermost pair the broadest, and green on the back. From each of these scales, one at a time, appear the *flowers*, about four in a whorl, slightly pubescent, bright uniform yellow. The two lips of the corolla are nearly equal in length; upper lip entire, carinate, and conduplicate, emarginate; lower of three nearly equal segments, lanceolate, the intermediate one scarcely larger than the lateral ones: the tube of the corolla long, slender. *Calyx* of five, nearly equal, oblong, moderately acute sepals. *Stamens* as in *A. aurantiaca*, included. *Ovary*, from a thickened base, ovate: *style* long, slender, downy above: *stigma* obtuse, bifid.

Fig. 1. Flower. 2. Pistil:—*magnified.*

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Tab. 4900.

NYCTANTHES Arbor-tristis.

Arbor-tristis, or *Night Jasmine*.

Nat. Ord. Jasmineæ.—Diandria Monogynia.

Gen. Char. *Calyx* tubulosus, integer aut vix 5–6-denticulatus. *Corolla* tubo tereti, limbo 5–7-lobo, lobis obcordatis per æstivationem sinistrorsum contortis. *Antheræ* 2, ad faucem sessiles. *Stigma* capitatum. *Capsula* chartacea, compressa, obovata, emarginata, bilocularis, bipartibilis, loculis indehiscentibus. *Semina* in quoque loculo solitaria, fundo affixa, erecta, exalbuminosa.—Frutex *Indicus, non scandens.* Ramuli *tetragoni.* Folia *opposita, breviter petiolata, ovata, acuta, utrinque scabra.* Pedunculi *axillares et terminales, apice flores tres umbellulatos bibracteatos gerentes.* Corollæ *albæ* tubo *aurantiaco.* Flores *odoratissimi. De Cand.*

Nyctanthes Arbor-tristis.

Nyctanthes Arbor-tristis. *Linn. Sp. Pl. ed. v.* 2. *p.* 8. *Roxb. Fl. Ind. v.* 1. *p.* 85. *Hort. Kew. ed.* 2. *v.* 1. *Ker, Bot. Reg. t.* 399. *De Cand. Prodr. v.* 8. *p.* 314.

Scabrita scabra. *Linn. Syst. Veget. ed.* 12. *p.* 115.

Parilium Arbor-tristis. *Gærtn.*

Manjapumeram. *Rheede, Hort. Malab. v.* 1. *p.* 35. *t.* 21.

Sép'halicá. *Jones, Asiat. Res. v.* 4. *p.* 244.

In no modern work on Botany does a good figure of this interesting plant appear; indeed we know of only one such figure at all, that of Mr. Ker above quoted, and that is so indifferent that we are glad to offer a better from plants which were raised at Mount Lebanon, Twickenham, by Her Grace the Dowager Duchess of Northumberland, from seeds lately received from India. It is treated as a stove-plant. Though introduced by Sir Joseph Banks in 1781 from India, it is nevertheless little known in our collections. Its name, *Nyctanthes* (*νυξ, night*, and *ανθος, flower*) *Arbor-tristis*, has perhaps created a prejudice against it. Sir William Jones tells us: "This gay tree (for nothing *sorrowful* appears in its nature) spreads its rich odour to a considerable distance every evening, but at sunrise it sheds most of its *night-flowers*, which are collected with care for the use of

perfumers and dyers. My pundits unanimously assure me that the plant before us is their *Sép'halicá*, thus named because bees are supposed to sleep on the blossoms." It is certain, however, that when the fragrant corollas, with the bright orange eye and orange tube have fallen, as they do early in the morning, the plant has but an indifferent appearance. These orange-coloured tubes are, according to Roxburgh, what yield the colour or dye, but unfortunately no way has yet been discovered of rendering this colour permanent. The plant blossoms through the summer months. Although a native of India, it is not correctly known of what particular district it is a native: Clusius says Goa, and only there; but Dr. Hooker found it wild abundantly in Assam.

Descr. A straggling, but not climbing *shrub* (in India often a small *tree*), with spreading, acutely four-angled, and almost winged *branches*, the angles often tinged with red. *Leaves* ovate, acuminate, from two to five inches long, opposite, penninerved, entire or often dentato-lobate; petioles half to three-quarters of an inch long. *Corymbs* terminal, the branches opposite, three-flowered. *Flowers* sessile, each flower subtended by two broadly ovate *bracts*, almost concealing the calyx. *Calyx* cylindrical, sub-turbinate, villous with appressed hairs, truncate, with five very minute teeth. *Corolla* hypocrateriform; *tube* thrice as long as the calyx, orange-colour within and without, within also hairy at the base; *limb* of six, imbricating, cuneate, subcontorted, crose, white, spreading *segments*. *Stamens* two, included; *filaments* very short, inserted just within the mouth of the tube; *anther* ovato-cordate, having a small curved *spur* at the back, near the apex. *Ovary* ovato-globose; *style* included, shorter than the tube of the co-rolla; *stigma* peltate, with a depression in the centre.

Fig. 1. Calyx. 2. Corolla laid open, showing the insertion of the stamens. 3. Stamen. 4. Pistil:—*magnified*.

Tab. 4901.

CYPRIPEDIUM PURPURATUM.

Purple-stained Lady's Slipper.

Nat. Ord. Orchideæ.—Gynandria Diandria.

Gen. Char. Perianthium patens. *Sepala* lateralia connata aut distincta, labello supposita. *Petala* libera, sæpius angustiora. *Labellum* inflatum, margine utrinque auriculato inflexo. *Columna* nana. *Stamina* 3, quorum unum sterile centrale dilatatum inflexum, et 2 fertilia lateralia; *antheræ* sub stamine sterili latentes, subrotundo-biloculares. *Pollen* pulverulento-glandulosum. *Stylus* subliber, teres, stigmate disciformi terminatus.—Herbæ *terrestres utrinque orbis, ab æquatore fere ad circulum arcticum vigentes.* Folia *radicalia aut caulina, coriacea aut plicata.* Flores *solitarii racemosi v. paniculati, speciosi. Lindl.*

Cypripedium *purpuratum;* acaule, foliis oblongis acutis striatis maculatis basi equitantibus, scapo aphyllo pubescente, sepalo dorsali acuminato margine revoluto, petalis ovali-oblongis acutis marginibus superne præcipue ciliatis (non verrucosis), stamine sterili lunato.

Cypripedium purpuratum. *Lindl. Bot. Reg. v.* 23. *t.* 1991. *Wight, Ic. Plant. Ind. Or. v.* 5 *t.* 1760?

We have already, under our *Cypripedium barbatum* (Tab. 4234), indicated the very close affinity between that and *C. venustum*, Wall., and our present plant. The chief distinction rests on the absence of the warts at the upper edge of the petals, and those petals are in the plant before us much broader than those of *C. barbatum;* but their characters seem constant, and we think that *Cypripedium* (so called) *purpuratum* of Dr. Wight, above quoted, should rather be referred to *C. barbatum*, for the petals are very narrow, and though the verrucæ themselves are not distinctly exhibited (the drawing being most likely taken from the dried specimen), yet the marginal hairs are represented in tufts, as if they grew from warts. It is a lovely species, whether the size and beauty of the flowers or the mottled foliage be considered: native of the Malayan Archipelago, and flowers in a damp stove in November.

Descr. *Stem* none. *Leaves* radical, the longest four to five inches long, oblong, moderately acute, often bi-trifid at the point, distichous, sheathing and equitant at the base; the surface is

striated, and between the striæ is alternately, in blotches, green and white (or whitish-green) ; the substance subcoriaceous. *Scape* from a small upright sheathing central leaf, eight to ten inches long, terete, purple, naked, pubescenti-hirsute. *Flower* large, solitary, terminal. At the base of the long, club-shaped, furrowed, downy *ovary* is a rather large green upright *bract*. *Sepals* spreading, two upper ones very large, subrotund, much acuminated, white, richly striped with purple ; *lower sepal* (two combined) small, oblong, lanceolate, directed downwards. *Sepals* large, spreading, oblong, acute, brownish-purple, streaked, at the base spotted with deeper purple. *Labellum* large, unguiculate, helmet-shaped, greenish-purple, obscurely veined. *Sterile stamen* **very large, reniform.**

Tab. 4902.

CATTLEYA maxima.

Largest Cattleya.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 4700.)

Cattleya *maxima ;* pseudobulbis clavatis elongatis alte sulcatis, foliis subemarginatis basi sublatioribus, pedunculo 2–3- (pluri-) floro, spatha angipiti longiore, sepalis lanceolatis petaloideis subrecurvis, petalis pluries latioribus convexis undulatis reticulatim pictis, labello convoluto apice explanato oblongo subcrispato-lobato per axin lævissimo. *Lindl.*

Cattleya maxima. *Lindl. Gen. et Sp. Orchid. p.* 116. *Bot. Reg.* 1844, *sub t.* 5. *Journ. of the Hort. Soc. v.* 1. *Part I. p.* 64. *Bot. Reg.* 1846, *v.* 32. *t.* 1.

This very fine specimen was sent us, in the autumn of 1855, by W. G. Farmer, Esq., of Nonsuch Park, Surrey, as a quite new *Cattleya*, the origin of which was not precisely known; but there cannot be the smallest doubt of its specific identity with *Cattleya maxima*, figured and described by Dr. Lindley from Hartweg's Plants: native of Guayaquil and Columbia. But, though described in the several works above noticed as a new species, our great Orchidist expresses his doubts how far it can lay claim to the rank of a species, for it evidently approaches both *C. Mossiæ* and *labiata* in many important particulars: "its main peculiarities consist in its long-channelled pseudobulbs, and in its very convex wavy petals, which are quite different in appearance from the thin, nearly flat petals of *C. Mossiæ* and *labiata*." Be that as it may, the plant is a very beautiful one, and the specimen particularly fine, having seven fully-formed flowers on the spike at the time it was submitted to our artist for drawing; and the labellum, of a pale colour, almost white, with an orange-yellow streak on the disc, is elegantly reticulated with purple veins. The sepals and petals are paler in colour than the specimen figured by Dr. Lindley, and this only sets off the variegated colouring of the lip to the greater advantage.

Descr. *Pseudobulbs* clustered, forming a terete or slightly

compressed *stem*, a foot or more long, sheathed with long, membranaceous, striated *scales*, and terminated by a single, oblong, coriaceous *leaf*, eight or ten inches long, and from two to three broad. *Panicle* from the apex of the pseudobulb and base of the leaf, the peduncle arising from a compressed membranous sheath. *Flowers* six or seven on the same panicle, extremely large and handsome. *Ovary* very long, clavate, pedicelliform. *Sepals* spreading, narrow, lanceolate, acuminate, even, pale rose-colour. *Petals* equally spreading, of the same colour, much broader than the sepals, waved. The *lip* is very large; lower part (or two lateral lobes) convolute into a tube; the central lobe is large and spreading, crisped at the mouth: the ground-colour of the tube is white; in the disc or centre is an orange-coloured streak, and from a deep rose-coloured line bordering that a number of branching lines of the same colour diverge towards the margin.

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Tab. 4903.

ENCEPHALARTUS Caffer.

Caffrarian Encephalartus, or Caffer-bread.

Nat. Ord. Cycadeæ.—Diœcia Polyandria.

Gen. Char. Flores masculi:—*Antheræ* apertæ, in strobilum terminalem pedunculatum collectæ, undique rachi communi insertæ, singulæ oblongo-cuneatæ, apice incrassato-obtusæ v. acuminatæ, acumine sursum flexo, connectivo plus minus distincto. Flores fœminei:—*Carpidia* plurima, monophylla, aperta, in strobilos terminales pedunculatos collecta, rachi communi undique inserta, singula basi in stipitem attenuata, apice in peltam rhomboideam dilatata, pelta subtus utrinque ovulo unico inverso fœta. *Fructus* syncarpius, e carpidiis laxiuscule coalitis. *Semina* ovoidea, *testa* ossea, sæpius carpidii processu fungoso cupulatim excepta. *Embryo* inversus, in axi albuminis carnosi, *radicula* respectu racheos communis centripeta.—Arbores, *interdum giganteæ, in* Africa australi *subtropica (regione Caffrarum)*, frondibus *pinnatis*, pinnis *lata basi sessilibus, multinerviis, apice sæpius spinoso-denticulatis. Endl.*

Encephalartus *Caffer;* caudice erecto glabro tereti-cylindraceo elato, foliis (cum petiolo) subtripedalibus apice recurvis circumscriptione lanceolatis pinnatis glabris, pinnis utrinque sub-37 erecto-patentibus anguste lanceolatis coriaceis rigidis atro-viridibus (minime glaucis) planiusculis supra nitidis estriatis subtus minute longitudinaliter striatis, margine paululum recurvis integris vel uni- vel remote- bi-tridentato-spinosis, inferioribus latioribus apice mucronato-spinosis reliquis mucrone obtuso recurvo terminatis, rachi glabra obtuse inequaliter subtetragona, amento masculo subcylindraceo sesquipedali, squamis antheriferis oblongis glabris tuberculoso-rugosis apice rostrato, rostro decurvo truncato.

α. foliolis omnibus integerrimis. (Tab. nostr. 4903.)

β. foliolis hic illic remote dentato-spinosis.

Encephalartus Caffer. *Lehm. Pugill. v.* 6. *p.* 11. *Miq. Monogr. Cycad. p.* 53.

Cycas Caffra. "*Thunb. Nov. Act. Reg. Soc. Ups. tom.* 2. *p.* 283."

Zamia Cycadis. *Linn. Fil. Suppl. p.* 443. *Ait. Hort. Kew. ed.* 2. *p.* 412.

Zamia Caffra. *Thunb. Fl. Cap. ed. Schult. p.* 429.

Encephalartus longifolia. *Lehm. Pugill. v.* 6. *p.* 14. *Miq. l.c. p.* 54.

A desire to give a local habitation and a name, if possible, to this noble Cycadaceous plant, of which we have received at Kew splendid living specimens from various friends, our finest from J. Moxon, J. Brehem, and — Ariderne, Esqs., from the neighbourhood of Graham's Town, induce me to give a representation from imperfect materials,—imperfect from the absence of fruit-bearing amenta, in which probably the most dependable distinguishing characters will be found to reside. Of the species to which it belongs, I would desire to speak with great caution; and

indeed several of the fourteen described species of the genus are generally, for want of complete specimens, unsatisfactorily distinguished. Of those fourteen I had hesitated whether to refer our plant to the *E. Caffer*, a plant of Thunberg's discovery, or the *E. longifolius* of Lehmann, two species which have so many points in common, that I have at length ventured to consider them the same and to adopt the older name.* Our specimens are certainly liable to some variations in the greater or lesser length and breadth of the leaflets, and in their being sometimes wholly entire on a plant, while on other plants a considerable number is seen bearing one or two or three large, often patent, remote, spinous teeth, generally on one margin.

E. Caffer, being a plant of the 'Hortus Kewensis,' might be expected to be an authentically named species in the Gardens of Kew; but none has of late years borne that name, and the one now before us is of recent importation; but there is a fine old *Encephalartus*, introduced by Masson (as was the *E. Caffer* of H. K.), which I should have been disposed to refer to that species, if it had exhibited any disposition to toothing on the leaflets (and the two varieties given by Aiton are both toothed), and were it not that the leaves, especially the recently formed ones, are as glauco-pruinose as those of *E. horridus*, a peculiarity not noticed by any author as existing in *E. Caffer*. The plant to which I now allude (of which an atlas-folio figure was engraved from the pencil of Mrs. Withers, and published under the name of *E. pungens*) has much longer leaves than those of our *E. Caffer*, five and a half feet long, not, or scarcely, recurved at the extremity, the leaflets larger and longer, more crowded, fifty-two to sixty on each side the rachis, *all* mucronated; a male cone from it, preserved it in the Museum, is two feet five inches long and eight inches in diameter; and there is reason to believe it was a plant of the same species which produced a female cone at Lady Tankerville's, Walton-upon-Thames, in 1832, and was published by Mr. Chandler,† in three atlas-folio plates; and as that plant is known to have gone to Chatsworth, it is probable that it was that which bore the fruit that was modelled there by James Yates, Esq., and of which he kindly presented a model to Kew, under the name of *E. Caffer*.

In regard to the figures of *E. Caffer* and *E. longifolius*, referred to by Miquel, I regret that I have not access to either, and they are probably unimportant.

The *Encephalartus Caffer* is the Bread-tree of the Caffers; and

* Dr. Lehmann thus distinguishes the two in his 'Pugillus':—

E. Caffer; caudice glabro, rachi trigono pinnisque lanceolatis acutis mucronatis viridibus glabris, junioribus dente uno alterove, adultis integris, fructu glabro.

E. longifolius; caudice glabro, rachi tetragono pinnisque lanceolatis acutis muticis integerrimis viridibus glabris, fructu glabro.

† Under the incorrect name of *Zamia pungens*.

the substance called *Caffer-bread*, Thunberg tells us, is "the medulla or pith (in other words, the cabbage, or young unformed leaves, while yet within the substance of the top of the trunk), from which the Hottentots contrive to prepare their bread. For this purpose, after scooping out the pith, they bury it in the earth, and leave it there for the space of two months to rot, after which they knead it and make it into a cake, which, in their usual slovenly and filthy manner, they slightly bake in the embers. I observed that the tree stood in dry and sterile places, between stones, and grew slowly." The seeds are also roasted and eaten.

Our object now is to give the best description we can of the species under consideration.

Descr. The individual from which our drawing was taken exhibits a *trunk* which, like the "Black-boys" (*Xanthorrhœa*) of Australia, had been blackened by the fires of the natives, is six and a half feet high,* erect, nearly cylindrical throughout, with a circumference of three and a half feet, the whole presenting on the surface, by the persisting bases of the fallen leaves, a kind of tessellated work, a compact tissue of areoles of a somewhat transversely rhomboidal form, all coming to the same level, so that no one projects beyond the rest. Near the summit the bases of the recently fallen leaves are more prominent, and give a tuberculated character; all appear glabrous, in nowise villous or squamulose. Forming a beautiful crown on the scaly summit, arise the *leaves*, thirty or forty or more in number, spreading in all directions, three to three feet four inches long, more or less recurved, the outer ones for nearly their whole length, the rest more especially so at the apex, where they have a somewhat scorpoid character. The *petiole* is six or eight inches long, somewhat terete, the upper side however nearly plane, and having a sort of ridge in the centre, so that a transverse section (with the somewhat keeled back) is obsoletely four-angled, one angle (the back) more rounded than the rest, and the same form runs through the rachis, as shown in our Fig. 1. These leaves are of a very harsh, rigid, and coriaceous character, lanceolate, pinnated for the whole length with numerous *pinnæ*, four to six inches long, five lines broad in the widest part; these are somewhat obliquely set on to the margins formed by the nearly plane upper surface of the rachis, and are sessile, the very base spreading or decurrent both above and below into a kind of foot, which is paler-coloured than the leaf or rachis; these pinnæ are alternate, they rarely spread horizontally, but are erecto-patent with regard to the rachis, of a linear-lanceolate form, of a dark green colour, the lower ones, which are broader than the rest, ending in a strong mucronate point, the rest have a much shorter and less sharp point, which turns back (uncinate); the upper surface is the

* Another of our specimens has the trunk eight feet high all but two inches.

darkest-coloured and most glossy, is obsoletely tuberculated with small, raised, distant points, nearly plane, but sometimes slightly channelled or grooved in the centre, destitute of striæ, but in the young leaves the surface, under a rather strong lens, has a minutely furfuraceous appearance; beneath the margin is slightly recurved, and there is a carina or slightly projective keel or midrib, and the surface is seen to be minutely and closely striated; the margin is quite entire, solitary, no single tooth in the plant now before us; but we possess other plants, and of various ages, in which some of the leaves are as entire as in this, while others have a greater or less number of leaflets with one or two or three remote teeth, generally on one (the lower) side or margin, and these are often large and spinulose, and as if effected by a gash, mostly near the base, approaching in character some of the lesser divisions in the leaflets of *E. horridus*, in no case confined to the apex of a branch, as the toothing is said to be in both the varieties of *E. Caffer* mentioned by Aiton.*

Male Amentum one foot nine inches long, including the short, stout stipes, sixteen inches in girth, arising from the apex of the trunk and from the centre of the crown of leaves, consisting of a number of scales attached to a central axis, united into the form of a nearly cylindrical, moderately acute *cone*, four inches in diameter. Each *scale* (*anther*, according to the views of those who compare, and with much reason, the floral organs of the *Cycadeæ* with those of *Coniferæ*,—and, what are here called anther-cells, *pollen-masses*),—is about two inches long in the widest part of the amentum, broad, oblong-cuneate, thick, leathery, almost woody when old, tawny-brown, thicker in the middle and keeled on the under side, rough and tuberculated as if by a wrinkling of the substance, terminating in a kind of rostrum, more or less long and more or less truncated at its apex, which is curved downwards. The under side of this is covered with crowded, tawny-orange, one-celled, globose, firm and subcoriaceous, quite sessile *anther-cells*, splitting open on the anterior side longitudinally into two valves, and filled with a pale globose subpellucid powder, which, under a microscope, is seen to be marked with a transverse line. These *anther-cells* and their contents bear a most exact resemblance to the spores and spore-cases of *Botrychium* among Ferns.

Fig. 1. Lower portion of a leaf. 2, 3. Upper and under side of a male scale of the male amentum or cone:—*nat. size*. 4, 5. Anther-cases. 6. Spores:—*magnified*.

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* Since this description was printed, I have received from James Yates, Esq., Lauderdale House, Highgate, a letter full of interesting information on this and other allied species of *Encephalartus*, too long for insertion, but which I trust will be allowed to appear in another place. He had however long ago considered our present plant to be *E. Caffer*, and *E. longifolius* a mere state of the same.

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Tab. 4904.

RHODODENDRON Moulmainense.

Moulmain Rhododendron.

Nat. Ord. Ericeæ.—Decandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4336.)

Rhododendron *Moulmainense*; frutex glaberrimus, foliis lato-lanceolatis subacuminatis utrinque nudis brevi-petiolatis, petiolis basi incrassatis, umbellis terminalibus, pedunculis flores longitudine æquantibus nudis, calyce minutissimo 5-lobo, corollæ (albæ intus flavescentis) tubo elongato sulcato, limbi subæquilongi lobis oblongo-ovatis undulatis patentibus, ovario oblongo profunde 6-sulcato 6-loculari, staminibus 10 limbo corollæ brevioribus, filamentis basi pubescentibus, stylo paululum staminibus longiore.

Recent botanists have clearly shown that in the eastern parts of the world, near the parallel of the Malay Islands, in mountain regions from Borneo and Java, south, to the Sikkim-Himalaya in the north, is the maximum of *Rhododendrons* to be found: witness Dr. Hooker's discoveries in the latter country, Griffith's and Mr. Booth's in the adjacent territory of Bootan, the Dutch botanists in Java, and Mr. Lowe's in Borneo. The native country of the species now figured is within the limits just mentioned, namely Moulmain, on the Gerai Mountains, at an elevation of 5000 feet above the level of the sea, where it was discovered by Mr. Thomas Lobb. It should be observed, that a dried specimen from Mr. Lobb, with the same locality, and apparently the same species, has red flowers. Seeds were reared by Messrs. Veitch of the Exeter and Chelsea Nurseries, and the flowering branch here figured was sent to us from a warm greenhouse in January of the present year.

Descr. *Shrub* with reddish branches, and glabrous, as is every part of the plant, and destitute of the minute scales so common to many species of the genus. *Leaves* mostly spreading from the apex of a branch and, in the flowering specimen, just beneath the umbel, four to five inches long, broadly lanceolate, penninerved,

shortly acuminate, coriaceous, dark green above, paler beneath. *Petioles* short, terete, swollen at the base. *Flowers* forming an *umbel* from the apex of the branch, but two or three arise togegether from different points. *Peduncles* about as long as the flowers. *Calyx* very minute, scarcely conspicuous, except when the corolla is removed, and then a small five-lobed disc is seen. *Corolla* pure white (in our specimen), tinged with yellow on the upper side within, infundibuliformi-campanulate. *Tube* moderately long, furrowed: *lobes* of the *limb* longer than the tube, spreading, oblong-obtuse, but apiculate, undulated. *Stamens* ten, spreading, shorter than the lobes of the corolla: *filaments* slightly thickened and villosely downy: *anther* small, oblong (abortive?). *Ovary* oblong, unusually narrow in this genus, deeply six-sulcate. *Style* glabrous, longer than the stamens. *Stigma* capitate, indistinctly lobed.

Fig. 1. Flower:—*nat. size.* 2. Stamen. 3. Calyx and pistil. 4. Calyx and ovary, the latter cut through transversely:—*magnified.*

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Tab. 4905.

LÆLIA acuminata.

Tapering Lælia.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (§ Epidendreæ.) *Sepala* explanata, lanceolata, æqualia. *Petala* majora, paulo difformia. *Labellum* (posticum) 3-partitum, lamellatum, circa columnam convolutum. *Columna* aptera, carnosa, antice canaliculata. *Anthera* 8-locularis. *Pollinia* 8, caudiculis 4 elasticis.—Herbæ *epiphytæ*, rhizomate *pseudobulbophoro*. Scapi *terminales, pauci- v. multiflori.* Flores *speciosi, odorati. Lindl.*

Lælia *acuminata;* pseudobulbis ovatis compressis rugosis, foliis solitariis emarginatis scapo erecto brevioribus, floribus corymbosis, bracteis linearibus acuminatis ovario duplo brevioribus, sepalis linearibus petalisque lanceolatis undulatis acuminatis, labelli lobis lateralibus rotundatis intermedio lanceolato undulato acuminato. *Lindl.*

Lælia acuminata. *Lindl. Bot. Reg.* 1841. *t.* 24.

This delicate, graceful, and fragrant *Lælia* is a native of Guatemala, whence it was sent to the Horticultural Society by Mr. Hartweg, with the name of 'Flor de Jesus;" so called on account of its beauty by the natives. It was discovered at a place called Retatulen, growing on the trunk of the Calabash-tree.

From *L. rubescens*, Lindl. Bot. Reg., 1840, t. 41, its near ally, it differs, Dr. Lindley observes, "in its larger, wrinkled pseudobulbs, larger and more corymbose flowers, and in the different form of the labellum;" but as our plant (correctly named by Dr. Lindley) has the flowers of this species (*L. acuminata*), but the small pseudobulbs of *L. rubescens*, it may admit of a doubt if the two be permanently distinct from each other. The only remedy would be to make a new species of this, which, seeing how liable to vary are the Orchideous plants in their pseudobulbs and leaves as well as in the flowers, we are very ill-disposed to do. Our plant flowered in November.

Descr. *Pseudobulbs* in our plant small, clustered, broad ovate, compressed, convex on one side, almost plane on the other, with a central elevated line, slightly wrinkled, surrounded with large, brown, ovate, acuminated scales, bearing at the summit an oblong,

rather acute, coriaceous, solitary *leaf*, four to five inches long, without visible nerves. From the base or axil of this leaf the slender, jointed, erect *scape* arises, about a foot high; sheathed with a brown scale at every joint, terminated with four, spreading, white, graceful, fragrant *flowers*. *Ovary* long, pedunculiform, subtended by a subulate *bract*, about half its length. *Sepals* spreading, linear-oblong, rather acute. *Petals* oblong, nearly twice the width of and longer than the sepals, waved, much spreading. *Lip* about equal in length with the petals, pure white, as is the rest of the flower, but with a stain of yellow in the disc, which again at the base is deep purple,—oblong, three-lobed, veined in the middle and slightly downy on the surface; the lateral lobes are incurved; the intermediate ones oblong, acute, recurved towards the apex, acute, waved. *Column* furrowed in front. *Anther-case* hemispherical. *Pollen-masses* four in each anther-cell.

Fig. 1. Labellum. 2. Column. 3. Pollen-masses.

Tab. 4906.

BANKSIA Victoriæ.

Victorian Banksia.

Nat. Ord. Proteaceæ.—Tetrandria Monogynia.

Gen. Char. Flores in amentum exinvolucratum collecti, paribus tribracteatis. *Perigonium* quadripartitum vel quadrifidum. *Stamina* 4, apicibus concavis laciniarum perigonii immersa. *Squamulæ* hypogynæ 4. *Ovarium* uniloculare. *Ovula* 2, collateralia, supra medium marginis affixa, primiæ latere exteriore longitudinaliter fisso, nucleum nudante. *Stylus* filiformis; *stigma* clavatum. *Folliculus* ligneus, bilocularis, ovulorum priminis in dissepimentum ligneum liberum bipartibile concretis. *Semina* 2, utrinque dissepimenti basi excavatæ adplicita, superne in alam cuneatam producta.—Frutices *vel* arbores *mediocres, in* Nova Hollandia *extratropica passim obviæ, in littore intratropico rarissimæ;* ramis *umbellatis;* foliis *sparsis, raro verticillatis, integris, serratis vel pinnatifido-incisis, in eadem stirpe sæpe variis, glandulis cutaneis hypogynis;* amentis *solitariis, terminalibus vel raro lateralibus, cylindraceis vel interdum abbreviatis, bracteis aliquot brevibus angustis subtensis;* florum bracteis *persistentibus majoribus solitariis, minoribus geminatis collateralibus, interioribus amenti fructiferi rachi ut plurimum incrassata et cum folliculorum basibus conferruminata. Endl.*

Banksia *Victoriæ;* ramis fulvo-tomentosis, foliis sparsis elongato-linearibus (6–10-pollicaribus) pinnatipartitis utrinque tomentosis subconcoloribus supra demum glabratis lævibus sinubus acutis, lobis late ovato-triangularibus subisosceli muticis incurvato-acuminatis, supra aveniis, subtus anguste nervoso-marginatis 6–8-nerviis albido-punctatis, capitulo terminali sessili foliis superato ovato amplo, squamis infimis longe rufo-barbatis, calyce pollicari basi glabro, stylo calycem superante arcuato glabro (v. villoso) apice incrassato, stigmate medio læviter incrassato supra conico-cylindraceo infra attenuato.

Banksia Victoriæ. *Meisn. New Austral. Prot. in Hook. Jour. Bot.* 1855, *v.* 7. *p.* 119.

Banksia speciosa. *Lindl. Bot. Reg. t.* 1728 (*non Br.*).

A cut specimen of this fine *Banksia* was sent to us by Mr. Moore, of Glasnevin Botanical Garden, Dublin, which he raised from Swan River seeds from Mr. Drummond. There can, I think, be no doubt of its being the same with the *B. speciosa* above quoted in the Bot. Reg., but not the *B. speciosa* of Br. and Hook., Bot. Mag. t. 3052; and equally certain does it appear to be the *B. Victoriæ* of Meisner in Hook. Journ. of Bot., who described his plant from Drummond's Swan River Herba-

rium, Coll. VI. n. 203. He there justly observes that it is "a noble species, very near *B. speciosa*, but easily distinguished by the segments of the leaves being larger, flat, not white underneath, nor scrobiculate above;" and he honours it with the name of our gracious Queen. He does not seem to be aware of the figure in the 'Botanical Register,' which we quote.

Descr. This probably forms a good-sized *shrub*: the branches terete, woolly and villous, bearing small reddish abortive leaf-buds in the axils of the leaves. *Leaves* about a span long, on short, villous *petioles*, in outline oblong-cuneate, singularly truncate at the apex, with tufts of hair at the apex of the midrib; they are deeply pinnatifid, almost to the base, the lobes ovato-triquetrous, sharply acuminate, the lower margin longer than the upper one, the upper side even and more or less downy, dull green: beneath the lobes have many prominent parallel nerves, paler than the upper side, but not white, distinctly downy, minutely reticulated between the nerves: *midrib* beneath prominent and rusty-coloured. *Head* of flowers large, nearly globose: the *flowers* beautifully arranged in spiral lines. *Bracteas* cuneate, densely clothed with rusty-coloured hair, very long at the apex. *Sepals* silky with villous hairs, and style the same. *Stigma* subulate.

Fig. 1. Flower and bract. 2. A single bract:—*magnified*.

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Tab. 4907.

CYMBIDIUM CHLORANTHUM.

Yellow-green Cymbidium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. Perianthium explanatum, petalis sepalisque subæqualibus liberis. *Labellum* sessile, liberum, ecalcaratum, nunc læviter connatum, indivisum vel trilobum. *Columna* erecta, semiteres. *Anthera* bilocularis. *Pollinia* 2, sæpius postice biloba, in glandulam subtriangularem subsessilia. *Lindl.*

Cymbidium *chloranthum;* foliis ensiformibus supra pseudobulbum breve oblongum equitantibus obtusis supra medium planis recurvis, racemo stricto foliis breviore, bracteis minutissimis, sepalis petalisque obtusis, labello basi pubescenti apice retuso emarginato laciniis lateralibus nanis triangularibus, lamellis distantibus arcuatis verrucosis. *Lindl.*

Cymbidium chloranthum. *Lindl. Bot. Reg.* 1843, *Misc. p.* 102.

A very pretty species, of a genus mostly of Indian origin, introduced twelve or fourteen years ago from Nepal by the Messrs. Loddiges. Its blossoming season with us is May. The flowers are numerous on the raceme, of a pale, greenish colour, the column and lip are more yellow and paler than the perianth, and the whole centre is marked with blood-red spots.

Descr. *Leaves* springing from a swollen base or imperfect *pseudo-bulb;* their bases, jointed at about three inches from the bottom, are distichous and sheathing, in other words equitant; the blade of the leaf ensiform or loriform, recurved, narrowing below; the apex rather obtuse, the surface striated. *Scape* from the centre of the foliage, terete, shorter than the majority of the leaves, bearing a long, many-flowered *raceme*. *Ovary* narrow, clavate, tapering below into a pedicel. *Petals* and *sepals*, nearly uniform, spreading, oblong, obtuse, of a uniform yellow-green colour, spotted with blood-colour at the base. *Lip* broader than the sepals, yellowish-white, broad-oblong, obtuse, three-lobed, spotted with blood-red, especially near the base; lateral lobes small and incurved; the middle lobe oval, scarcely retuse: on

the disc, in the lower half, are two longitudinal, elevated, crenated, rather tuberculated *crests*. *Column* shorter than the lip, semiterete, yellow, sprinkled with small blood-coloured dots. *Anther-case* terminal, hemispherical. *Pollen* of two broadly ovate, cleft masses, sessile upon a small membranous gland.

Fig. 1. Lip. 2. Column. 3, 4. Anterior and posterior view of the pollen-masses :—*magnified.*

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Fitch del. et lith.

Vincent Brooks Imp.

Tab. 4908.

TUPIDANTHUS CALYPTRATUS.

Calyptrate Tupidanthus.

Nat. Ord. Araliaceæ.—Polyandria Monogynia.

Gen. Char. Tupidanthus, *Hook. fil. et Thoms.* *Calycis tubus* late clavatus v. hemisphæricus, cum pedicello continuus (non articulatus), apice late explanatus, truncatus; limbus cum petalis in calyptram coriaceam depressam deciduam arcte concretus. *Stamina* plurima, patentia, ore calycis inserta; filamentis crasse subulatis; antheris oblongis. *Discus epigynus* latissimus, obscure 4–8-lobus, centro depressus et rima stigmatifera 4-cruri v. 3-cruri insculptus. *Ovarium* multiloculare, loculis angustissimis radiantibus rimæformibus; *ovulis* solitariis, pendulis; *stylo* nullo. *Bacca* coriacea, multilocularis, polysperma.—Arbor *alte scandens*, *parce ramosa*, *trunco ramisque subfuniformibus*; foliis *longe petiolatis*, *digitatim sub*-8-*foliolatis*; foliolis *petiolulatis*, *oblongo- v. obovato-lanceolatis*, *acuminatis*, *integerrimis*, *glaberrimis*; umbellis *lateralibus compositis*; pedunculis pedicellisque *crassissimis*, *articulatis*; floribus *viridibus*; staminibus *pallide stramineis*.

Tupidanthus *calyptratus. Hook. fil. et Thoms. MSS.*

This is perhaps the most remarkable plant of the Natural Order to which it belongs. It was discovered by Drs. Hooker and Thomson in the humid tropical forests at the base of the Khasia mountains in eastern Bengal; but the plant in Kew, from which the accompanying drawing is taken, had been received from the Belgian Gardens, and was considered to be derived from Java. In its native forests it forms a gigantic climber, with a trunk which, though as thick as the human thigh at the base, is slender in proportion to the great dimensions which the plant attains. It ramifies very sparingly, and the flowers and leaves appear only towards the ends of the branches. In the stove at Kew it flowered while still erect, and about ten feet high. The flowers, when the calyptra remains attached, resemble mallets, whence the generic name. The coalescence of the calyx-lobes and corolla into an arched coriaceous calyptra, all of which had unfortunately fallen when our drawing was made, together with the numerous stamens, the total absence of styles, and very numerous cells of the ovary, are perhaps unique characters in the Order. The

flowers are sometimes irregular, as if composed of two or three grown together.

Descr. A scandent *tree*. *Leaves* or *petioles* a foot long, with a short stipular sheath at the base. *Leaflets* seven to nine, radiating from the apex of the petiole, petiolulate, six to ten inches long, obovate or oblong-lanceolate, acuminate, quite entire and glabrous. *Flowers* in irregularly branched compound *umbels*; *partial umbel* of about eight rays, the *pedicels* as well as the *peduncles* or branches of the umbel are excessively stout and jointed to one another, but the flowers are not jointed on the pedicels. *Flowers* three-quarters to one and a quarter inch across, presenting, after the falling away of the calyptra, a broad, flat, obscurely lobed *disc*, depressed in the centre, and then marked with a longitudinal line, which is usually forked at both ends: the *stigmatic surface* follows this line and its branches; sometimes the line consists of three rays. On a transverse section of the *ovary* innumerable slits are seen, radiating from a pulpy green placental mass, of the same form as that of the stigmatic surfaces. Each of these slits represents a cell, with one pendulous compressed ovule. *Hook. fil.*

Fig. 1. Stamen. 2. Transverse section of ovary:—*both magnified.*

4909.

1.

2.

Tab. 4909.

CATTLEYA BICOLOR.

Two-coloured Cattleya.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 4700.)

Cattleya *bicolor*; foliis oblongo-lyratis caule tereti elato triplo brevioribus, sepalis lanceolatis falcatis acutis, petalis parum latioribus subundulatis obtusis, labello indiviso plano apice dilatato rotundato crenato convexo. *Lindl.*

Cattleya bicolor. *Lindl. Bot. Reg. sub fol.* 1919. *Lindl. Sertum Orchid. Plate V. f.* 1. *Bot. Reg.* 1838, *Misc. p.* 80.

"Epidendre iridée. *Descourtilz's Drawing, pl.* 49. *p.* 105."

The entire absence of the lateral lobes of the lip (which usually enfold the column in this genus) gives this species a most remarkable appearance, and may after all possibly be indicative of one of those freaks of nature which are so common in the flowers of this natural family. The column is here quite exposed, presenting an unnatural appearance in the flower. The sepals and petals are of a peculiar lurid colour; but this circumstance is in some degree compensated for by the delicate pink of the large fleshy column, and the deep rose-purple of the exposed upper side of the lip, with its white delicate fringe at the broad apex. The plant is a native of Brazil, and for a long time was only known in Europe by the drawing made on the spot by M. Descourtilz, published by Dr. Lindley. In 1838 it was announced as having been imported by Messrs. Loddiges. Our specimen was sent us in October, 1854, from the collection of the late Mr. Cox. M. Descourtilz is stated to have found it in the neighbourhood of Bom Jesus de Bananal.

Descr. *Stems* (or *pseudo-bulbs*) unusually long and slender for this genus, a foot or more in length, clustered, swollen and rooting at the base, jointed and deeply striated, more or less clothed with sheathing, deciduous, pale-brown membranaceous *scales*; bearing two, spreading, oblong-lanceolate, obtuse, coriaceous

Fitch del. et lith

Vincent Brooks Imp

Tab. 4910.

PENTAPTERYGIUM FLAVUM.

Yellow Pentapterygium.

Nat. Ord. Vacciniaceæ.—Decandria Monogynia.

Gen. Char. Calycis tubus 5-alatus; limbus 5-partitus, lobis ovatis. *Corolla* tubulosa, pentagona, 5-loba; lobis brevibus recurvis. *Stamina* 10, distincta; *antheræ* muticæ v. dorso brevissime biaristatæ; loculis in tubulos 2 coalitos apice liberos productis, ad apices antice dehiscentibus. *Stigma* truncatum. *Bacca* subglobosa, coriacco-carnosa, 5-alata, 5-locularis, limbo calycis coronata. *Semina* numerosissima, obovata.—Frutices Indici, *sæpissime epiphytici, glaberrimi v. glanduloso-pilosi;* foliis *coriaceis, ovatis, breve petiolatis, persistentibus;* floribus *axillaribus, solitariis racemosisve, plerumque speciosis.*—Pentapterygium, *Klotzsch in Linnæa, v.* 24. *p.* 47.

Pentapterygium *flavum;* ramis robustis foliisque glaberrimis, foliis coriaceis undique patentibus brevissime petiolatis ovato-lanceolatis acuminatis subserratis superne rugoso-venosis subtus pallidioribus, floribus in racemos folio brevioribus aggregatis nutantibus, pedicellis calycibusque puberulis, calycis lobis triangulari-ovatis corolla flava subventricosa dimidio brevioribus.

Thibaudia flava. *Nuttall, MS.*

The beautiful plant here figured is a native of North-eastern India, in the Duphla hills, on trees, at an elevation of 4–5000 feet above the sea-level, growing along with *Rhododendron Nuttallii*, and was raised from seeds which Mr. Booth had collected by our valued friend and correspondent Mr. Nuttall, at his place of Nutgrove, Rainhill. Though not a showy, it is a remarkably elegant and ornamental plant, from the deep green glossiness of the wrinkled leaves and the nodding racemes of yellow flowers, whose pedicels are red; and the same colour runs down the wings of the calyx-tube and edges its lobes. The yellow colour is a very unusual one in the Order to which it belongs, the only hitherto described species of the genus, *V. serpens* (Wight, Ic. Plant. Ind. Or. iv. t. 1183, and Hook. fil. Ill. Him. Pl. t. xv. *B*) having deep red corollas. The genus *Pentapterygium* is one of those into which the old *Vaccinium* has recently been broken by Klotzsch, and of the validity of all which genera we have many

doubts: the present, however, is a very natural group of species, including, besides *P. flavum* and *P. serpens*, the *Vaccinium rugosum* of Drs. Hooker and Thomson's distributed Indian collections, which is a native of the Sikkim Himalaya and Khasia mountains, and distinguished from *P. flavum* by the lanceolate leaves, longer and more slender pedicels, broader foliaceous blunt calyx-lobes, and deep red corolla. The present species is erect when cultivated; but, like many others of the Order, it probably prefers to grow epiphytically in shady forests.

Descr. A *shrub*, with glabrous, stout, woody *branches*. *Leaves* two to three inches long, ovate-lanceolate, acuminate, serrate, very shortly petioled, coriaceous, rugose above with reticulated veins, paler below. *Flowers* in short axillary racemes, pendulous or nodding. *Peduncle* short; pedicels slender, red, minutely pubescent. *Flowers* an inch long. *Calyx-tube* short, hemispherical, five-winged; limb five-lobed; lobes triangular-ovate, acute, margined with red. *Corolla* tubular, inflated, with five-angled and thick ribs, puberulous; lobes five, small, recurved. *Stamens* free; *filaments* short, pubescent. *Anther-cells* oblong, produced into very long slender connate tubes, which are free at the apex, and open in front by long slits: two minute *spurs* project backwards from the tip of the anther-cells. *Disc* depressed, ten-lobed. *Style* erect, slender, slightly enlarged towards the apex, truncate; *stigma* of five minute glandular points, placed within the truncated apex of the style. *Fruit* probably somewhat fleshy, as in *P. rugosum*, Hook. fil.

Fig. 1. Flower. 2. The same, with corolla and lobes of calyx removed. 3. Stamens. 4. Disc:—*all magnified.*

Fitch del. et lith.

Vincent Brooks Imp.

Tab. 4911.

ASPLENIUM Hemionitis.

Hemionitis-like Spleenwort.

Nat. Ord. Filices.—Cryptogamia Filices.

Gen. Char. Sori lineares, elongati, dorso venæ simplicis aut venulæ superioris furcaturæ, primariæ, aut omnibus venulis insidentes. *Indusium* lineare, elongatum, planum.—Rhizoma *subglobosum*. Frondes *fasciculatæ, coriaceæ aut herbaceæ, simplices, lobatæ pinnatimque divisæ*. Venæ *pinnatæ, crebræ, internæ aut parum subtus prominulæ, simplices aut uni-bifurcatæ, venulisque parallelæ, aut apice libero punctiformi acutove terminatæ, aut arcu transverso conjunctæ. Presl.*

Asplenium *Hemionitis;* cæspitosum, stipite semiterete facie superiore sulcato basi setoso-paleaceo, fronde circumscriptione cordata hastato-5-loba, lobo medio elongato acuminato, venulis omnibus soriferis apice intra marginem clavatis, soris elongatis.

Asplenium Hemionitis. *Linn. Sp. Pl. p.* 1537. *Brot. Fl. Lus. v.* 2. *p.* 398. *Sm. Tent. Fil. Gen. p.* 9. (*not of Swartz and Cavanilles.*)

Asplenium palmatum. *Lam. Encycl. v.* 2. *p.* 302. *Sw. Syn. Fil. p.* 75. (*excl. Syn. Lam. Ill. t.* 867. *f.* 2.) *Willd. Sp. Pl. v.* 5. *p.* 306. *Schkuhr, Fil. p.* 62. *t.* 66. *Webb, Plant. Canar. v.* 2. *p.* 438. (*excl. Syn. Lam. Ill.*)

Felix Hemionitis dicta, Maderensis, Hederæ arboreæ aliquatenus æmula. *Pluk. Alm. p.* 155. *Phyt. t.* 287. *f.* 4.

We are glad to embrace an opportunity of figuring this handsome Fern, partly on account of its beauty, and partly because it gives us the means of correcting some synonyms. It inhabits shady places in woody regions of North-western Africa, as far south as St. Nicholas, in the Cape de Verdes, the Azores, the Canaries, Madeira, and Spain and Portugal: in short, the south-western parts of Europe and north-western of Africa, including the adjacent islands. The plant requires a cool greenhouse for its cultivation.

It has no doubt been confounded with the *Scolopendrium Hemionitis*, Sw. (Schkuhr, Fil. t. 84), to which probably Linnæus's locality of "Italy" belongs (taken, it would appear, from Clusius); for our plant does not appear to be a native of Italy at all. Swartz and Willdenow indeed refer the Linnæan *Asplenium*

Hemionitis without any doubt to the *Scolopendrium*; but Smith corrects this error under that genus in Rees's Cyclopædia: "*Asplenium Hemionitis* of Swartz, Cavanilles, and others, has nothing of the character of the genus, except when two lines, originating in different lobes or rudiments of lobes, rarely and accidentally meet in opposition to each other;" and, in his excellent 'Tentamen Bot. de Filicum generibus dorsiferarum' (p. 9), *Asplenium Hemionitis* is given the example of the true genus *Asplenium*. We therefore feel ourselves quite justified in restoring the Linnæan name.

Mr. Kippist has been so good as to examine carefully the specimens of *Asplenium Hemionitis* and of *Scolopendrium Hemionitis* in the Linnæan and Smithian Herbaria, at the apartments of the Linnæan Society, and to communicate the following information, which is of more value than a bare description, especially as the figure represents all the essential characters.

"There can be no doubt that Sir J. E. Smith is perfectly right in referring the *Asplenium Hemionitis*, L., to that genus instead of to *Scolopendrium*, as is done by Swartz, Willdenow, etc. The type specimen in the Linnæan Herbarium, which is in good fruit, named and numbered ('2,' to agree with the first edition of the Species Plant.) in Linnæus's own hand, is clearly an *Asplenium*, with long, slender, closely-placed lines of fructification, extending nearly to the midrib and indusia, bursting towards the apex of the leaf, or of the lobe on which they are placed. The fronds are truly palmate, scarcely longer than broad (five-lobed, with the two posterior lobes more or less rounded), and usually shorter than their slender glabrous petioles. This is the *Asplenium palmatum* of Lamarck, Willdenow, etc., and is also the plant figured under that name by Schkuhr (tab. 66), as well as by Tournefort (Instit. tab. 322 B.). On a ticket fastened to the sheet is the following memorandum, in a hand with which I am unacquainted, probably that of the correspondent from whom Linnæus received the specimen: '*Asplenium* frondibus hastato-5-angularibus basi cordatis, stipitibus glabris. In monte alto, quo situm est castellum vetustum, prope Cintra Lusitanis.'

"Of this plant, there are specimens more or less lobed in the Herbarium of Sir J. E. Smith; (1.) from the younger Linnæus's Herbarium, without habitat; (2.) two fronds, one of them exactly cordate in outline, though the tendency to produce lobes is shown by the arrangement of the sori near the base of the frond, in double rows, with indusia opening towards the two lateral nerves, instead of towards the apex of the frond; (3.) a young plant and two detached fronds, marked 'Broussonet, 1798, Algiers?' They are all glued upon one sheet, on which is written, in Smith's hand, '*A. Hemionitis?*'

"Of the *Scolopendrium Hemionitis* of Willdenow, and (ex-

cluding the Linnæan synonym) apparently also of Swartz, the plant figured in Lamarck's Encyclop. t. 867, f. 2, by Tournefort (Instit. tab. 322 A.), and by Schkuhr (t. 84), the Linnæan Herbarium likewise contains specimens. These, which are readily distinguishable from the true *Asplenium Hemionitis*, L., by the contour of the frond, much longer in proportion both to its own breadth (across the basal lobes) and to the length of the stipes, Linnæus appears to have confounded with the common *Scolopendrium*, his *Asplenium Scolopendrium*, of which he had, 1st, the normal form, on a separate sheet, named '*Scolopendria*' (taking, according to his usual practice in the Herbarium, the generic name for granted), in his own hand, and with the number (3) of the Spec. Pl. prefixed; 2ndly, on another sheet, the dichotomous variety, figured by Schkuhr (tab. 83 b.), unnamed; and 3rdly, the *Sc. Hemionitis*, without habitat or number, but with the name '*Scolopendria*' written in ink by himself, and with the addition 'nova species?' in pencil, by Smith. Of this plant, I find, in the Smithian Herbarium, 1st, one small and unsatisfactory frond, scarcely distinguishable from *Sc. vulgare*, marked 'Rome, H. L. fil.;' 2nd, one young plant and two detached fronds in good fructification, marked 'South of Europe, Broussonet'. One of these has well-developed lobes at the base, and agrees perfectly with Schkuhr's figure. They are all on one sheet, inscribed by Sir James, '*Scolopendrium Hemionitis*, Sw. Syn. Fil. 90.' The only specimens of this species in the Herbarium of the British Museum are stated to have been gathered on the walls of the Pantheon, at Rome, by Mr. Yalden.

"Clusius gives 'Roma ex veteris cujusdam theatri ruinis' as the habitat of his *Hemionitis vera*, correctly referred by Swartz to his *Scolopendrium Hemionitis*. He does not quote as a synonym the *Hemionitis peregrina* of the same author, which he surely might have done with perfect safety, especially as he cites Petiver's figure, 126, fig. 5, which is manifestly copied from the woodcut of Clusius."

Fig. 1. Portion of a fertile frond, showing the venation and the sori. 2. Capsule. 3. Spores:—*magnified.*

Tab. 4912.

CORREA CARDINALIS.

Scarlet-flowered Correa.

Nat. Ord. Diosmeæ.—Octandria Monogynia.

Gen. Char. Calyx 4-dentatus, persistens. *Petala* 4, basi subconniventia aut in tubum longe coalita. *Stamina* 8, sub disco hypogyno 8-glanduloso inserta. *Ovarium* 8-sulcatum. *Stylus* 1, persistens. *Capsula* 4-cocca, *loculis* truncatis compressis. *Semina* in loculis 2–3 nitida intus adfixa, *cotyledonibus* ovalibus extus convexis.—Frutices; foliis *oppositis*, *integris*, pube *squamosa*, Hippophaes *more*, *obtectis;* pedicellis *unifloris*. *De Cand.*

Correa *cardinalis;* ramis gracilibus, ramulis foliisque utrinque pube fasciculata pallide ferruginea instructis, foliis remotis subuncialibus brevi-petiolatis patentibus v. reflexis elliptico-lanceolatis obtusiusculis integerrimis margine recurvis supra viridibus opacis subtus pallidis nervis obsoletis, pedicellis elongatis gracillimis folio longioribus unifloris apice bibracteatis, bracteis folio conformibus sed duplo minoribus, floribus nutantibus, calyce hemisphærico truncato obsoleto 4-dentato rufescente-tomentoso, corollæ pubescenti-tomentosæ tubo subclavato (coccineo), limbo 5-fido luteo lobis erectis acutis, staminibus 8 sublonge exsertis.

Correa cardinalis. *Muell. in Herb. nostr. cum MS.*

Raised from Australian seeds by Messrs. Veitch, of the Nurseries of Exeter and Chelsea, where the plant forms a handsome bush two to three feet high, with graceful, slender branches, leaves full dark green above, pale and whitish beneath, all the younger branches bearing drooping flowers an inch and an inch and a quarter long, of a rich scarlet colour, the segments or lobes of the limb only yellow. The filaments of the stamens again are exserted more than a quarter of an inch beyond the erect limb. We hardly know a more desirable greenhouse plant, flowering as it does in the beginning of March. Our Herbarium shows the plant to be identical with the *Correa cardinalis* of Dr. Ferdinand Mueller (now on the Exploring Expedition in North-west Australia), and which he discovered "about the Latrobe River, in sandy, bushy places of the hills, and in the sterile plain of Port Albert, Gipps' Land, Colony of Victoria, South Australia." It is quite distinct from any hitherto published species.

April 1st, 1856.

Descr. A *shrub* two to three feet high, with slender, twiggy, opposite, brown, terete *branches;* the young ones clothed with minute, tufted, stellated, ferruginous hairs. *Leaves* opposite, on short, slender *petioles*, about an inch long, subcoriaceous, elliptical-lanceolate, scarcely acute, the margin recurved and entire, clothed with minute, stellated hairs, above dark green, very pale and whitish, nerves obsolete. *Peduncles* axillary, long, slender, single-flowered, much longer than the leaves, bearing a single, large, drooping *flower* of a rich scarlet and yellow colour, with a pair of leaf-like bracteas just beneath the calyx. *Calyx* hemispherical or cup-shaped, ferruginously downy, truncate, with four minute almost obsolete teeth. *Corolla* more than an inch long, tubular, but approaching to clavate, rather narrow, downy; *limb* rather small, of four erect teeth. *Stamens* protruded a quarter of an inch beyond the limb, unequal; *filaments* glabrous, the shorter ones more dilated at the base than the larger ones. *Ovary* deeply four-lobed, villous: *style* as long as the stamens, with spreading distant hairs in the lower portion.

Fig. 1. Stamens. 2. Pistil:—*magnified.*

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Fitch del et lith.

Vincent Brooks Imp.

Tabs. 4913, 4914.

PHYTELEPHAS macrocarpa.

Large-fruited Ivory-Plant.

Nat. Ord. Phytelephantheæ.—Diœcia Polyandria.

Gen. Char. emend. *Flores* polygami-dioici, masculi et fœminei, cum staminibus, quorum antheræ steriles, indistinctis spadicibus, spathis inclusis. Masculi:—*Spadix* specie simplex, cylindricus, pedunculo squamis nonnullis instructo, rachi floribus densissime obtecto. *Flores* in prominentiis racheos brevibus (ramis decurtatis?) arcte-glomerati, bractea et calyce minimis sæpe delitescentibus. *Bractea* ovata, concava. *Sepala* tria: duo literalia majora, bracteæ similia, tertium posticum illis tectum. *Stamina* numerosa (36), e thoro. *Filamenta* filiformia. *Antheræ* lineares, erectæ, fere basifixæ, biloculares, connectivo mucronulatæ. *Pollen* ellipticum, longitudinaliter sulcatum. Fœminei:—*Spadix* simplex, squamis conpluribus spiratim dispositis obsessus, vertice *flores* nonnullos gerens, inter squamas absconditos, qui constant *pistillo* et *staminibus* numerosis illud cingentibus, *antheris* sterilibus. *Ovarium* subglobosum, *loculis* 6–9. *Stylus* terminalis, erectus, apice tripartitus, cruribus subulatis, unico simplici rariusve bifido, binis bifidis, divisionibus intus stigmatosis. *Ovula* solitaria, sessilia, erecta, integumento duplici. *Drupæ* (6–7) in capitulum maximum ponderosum aggregatæ, depresso-globosæ, deorsum cuneato-augulatæ, subpentagonæ, muricato-tuberculatæ et maturæ crasso-corticatæ, tuberculis sursum majoribus, longitudinaliter fibrosis et ex parte supra verticem fructus convergentibus, 6–9-loculares. *Semina* in loculis solitaria, e fructus angulis centralibus oblique adscendentia, hilo magno convexo cicatricoso, oblongo-obovata, introrsum bifacialia. *Testa* crassa, ossea, lævigata; membrana interna vasis ramosis percursa. *Albumen* osseum, solidum. *Embryo* periphericus, juxta hilum subbasilaris. *Germinatio* per chordam elongatam remotiva.—Planta *palmæformis*; caudice *mediocri, crasso, erecto vel decumbente.* Folia *omnia terminalia, magna, pinnatisecta,* segmentis *reduplicatis, multinerviis et venis transversis conspicuis*; floribus *odoratissimis. Seem. Bot. Herald, p.* 205.

Phytelephas macrocarpa. *Ruiz et Pavon, Syst. Veg. Fl. Peruv. et Chil. p.* 301. *Humb. et Kunth, Nov. Gen. v.* 1. *p.* 83. *Kunth, Enum. v.* 3. *p.* 109. *Mart. Palm. v.* 3. *p.* 306. *Hook. Journ. of Bot. and Kew Misc. v.* 1. *p.* 204. *Seem. Bot. Herald, pp.* 208, *t.* 45, 46, 47. *Ejusd. Bonpl. vol.* 3. *p.* 270. *t.* 1 *et* 2.

Elephantusia macrocarpa. *Willd. Spec. v.* 4. *p.* 1156.

Those who deplore that the great geological convulsions deprived the New World of its ivory-bearing animals, and only suffered their remains to be preserved in the deposits ascribed to the drift period of our times, may derive some consolation from the fact that there still exists in the virgin forests of tropical

America an ivory-bearing plant—the *Phytelephas macrocarpa*, Ruiz et Pav., producing a substance so exactly resembling to the eye the ivory obtained from elephants as to be frequently passed off for such, and even employed by mechanics, as far as its size will allow, in place of that article. When the Vegetable Ivory first came to be imported into Europe for commercial purposes has not yet been accurately ascertained; but there is reason to believe that it was shortly after the Spanish Colonies—its native country—obtained their independence (about the year 1826). Be that as it may, the vegetable ivory is now imported, chiefly from the river Magdalena, into Europe and the United States of America; but we are still uncertain to what amount, as we have no statistical information on that point; judging however from the use that is made of the article, the amount must be considerable. I know, from the inquiries instituted by Ferd. Scheer, Esq., that in some years no less than a hundred and fifty tons of it were imported into England; and that the "nuts" are shipped from the places where they grow in large quantities is evident from Purdie mentioning, in one of his letters to Sir W. J. Hooker (Botanical Magazine for 1847, comp. p. 14):—"A few days ago (about the middle of February, 1845) thirty tons of the 'nuts' arrived from the Magdalena (at Santamarta), commissioned for (the United States of) America and Germany." The "nuts" may be purchased in the toyshops of the British metropolis for a few pence each, but when bought in large quantities they are obtainable at a very much cheaper rate; in August, 1854, one thousand "nuts" were sold in London for seven shillings and sixpence.

Long before the attention of commercial men was directed to the vegetable ivory, the existence of the plant producing it was known to botanists. It was during the latter part of the last century that two Spaniards, Ruiz and Pavon, gave, in their 'Systema Vegetabilium Floræ Peruvianæ et Chilensis,' published at Madrid in 1798, a scientific name (*Phytelephas macrocarpa*, R. et P.) to it, together with a brief description and a notice of its Peruvian names, and its properties and uses. The generic name (from *φυτον*, a plant, and *ελεφας*, an elephant) was certainly well chosen, and has ever since been retained in systematical works in preference to that proposed by Willdenow (*Elephantusia macrocarpa*); unfortunately the diagnosis attached to it was very imperfect, the reason why the plant has to this day remained without a fixed station in the Natural System. A short time after the publication alluded to, Humboldt and Bonpland discovered the *Phytelephas macrocarpa* in New Granada, and collected some information concerning it, which however, useful as it proved in many respects, did not throw much light upon it in a

systematic point of view. Nor did Gaudichaud's labours tend much to advance our knowledge in that direction. That botanist did not see the plant growing wild, and his three plates of it, published in the 'Partie Botanique, Voyage de la Bonite,' unaccompanied as they are by any explanatory description, are almost unintelligible, and moreover they show that he held extravagant notions respecting the species of which the genus is composed; he fancying that it was a congregate of no less than ten, all of which he seems to have thought sufficiently characterized by the shape of the seeds—a most variable organ in this instance. In 1845 and 1846 Purdie, acting upon instructions from the Royal Botanic Gardens at Kew, did a great deal towards clearing the mist in which the Ivory plant had been so long enveloped. In 1848, Martius, in his famous work on Palms, gave, partly from Gaudichaud's figures, partly from imperfect specimens in his possession, a generic character of *Phytelephas* (Mart., Hist. Nat. Palmarum, vol. iii. p. 306), which greatly tended to place the organization of this remarkable plant in a clearer light. Morren (Dodonæa, vol. iii. part ii. p. 74) also wrote some valuable remarks on the seeds of it. In 1849, Sir W. J. Hooker contributed his share towards the perfection of our knowledge (Hooker's Journal of Botany and Kew Gard. Misc. vol. i. p. 204) by reproducing not only the pith of nearly all that had been written upon the subject, but also added some valuable observations of his own, as well as a detailed description of the fruit and seed; and he illustrated his paper with two plates, the one representing a view of a grove of Ivory-plants on the banks of the Magdalena (from a sketch of Edward Mark, Esq.); the other, the fruit, seed, and several toys made from the albumen. In December, 1847, whilst ascending the river Cupica, I had the good fortune to fall in with the Ivory-plant, and afterwards met with it in various other parts of Darien. A selection from the notes taken on those occasions was subsequently published (Hooker's Journal of Botany and Kew Gard. Misc. vol. iii. p. 303, and 'Narrative of the Voyage of H.M.S. Herald,' vol. i. p. 222). It contained a general description of the plant, and dwelt upon the close relationship of *Phytelephas* with *Pandaneæ*. Since then there has not been, so far as I know, any additional information given to the world; and it only remains for me to draw up an account of this remarkable production, as perfect as the various materials, published and unpublished, at my disposal will permit.

The Ivory plant is confined to the continent of South America, where it grows between the 9th degree of north and the 8th of south latitude, and the 70th and 79th of west longitude. It inhabits damp localities, such as confined valleys, banks of rivers and rivulets, and is found not only on the lower coast region, as

in Darien, but also on mountains at an elevation of more than 3000 feet above the sea, as in Ocaña. Amongst the Spaniards and their descendants it is known by the name of "Palma de marfil" (Ivory Palm), whilst its fruit is called by them "Cabeza de Negro" (Negro's head), and its seed "Marfil vegetal" (vegetable ivory). The Indians on the banks of the Magdalena term the plant "Tagua," those on the coast of Darien "Antá," and those of Peru "Pullipunta" and "Homero." It is generally found in separate groves, seldom intermixed with other trees or shrubs, and where even herbs are rarely met with, the ground appearing as if it had been swept. The trunk is always pulled down, partly by its own weight, partly by its aerial roots; and thus forms a creeping caudex, which is frequently twenty feet long, but is seldom higher than six feet. The top is crowned with from twelve to twenty pinnatisect leaves, the entire length of which is from eighteen to twenty feet. The segments are towards the base of the leaf alternate, towards the apex opposite; they are three feet long, two inches broad, and their entire number amounts generally to 160. All the plants which I saw were diœcious, the males always being more robust, and their trunks more erect and higher, than the females. The inflorescence of both emits a most penetrating almond-like smell. The infloresence of the male plant is a simple, fleshy, cylindrical spadix, which has three or four spathes, the flowers of which are densely crowded together, and sessile. They are generally furnished with a small bract, and a calyx consisting of three sepals. The stamens are numerous (thirty-six), the filaments filiform, the anthers linear, erect, affixed nearly at the base, and bilocular; the connective is mucronulate, and the pollen elliptical and furrowed lengthways. The inflorescence of the female plant has three or four spathes, and consists of a simple spadix, bearing on an average from six to seven flowers, which form a dense cluster, and are surrounded by bracts, placed in a spiral direction, the uppermost five of which, being often much longer than the style, but generally shorter, and pure white, have the appearance of petals; the stamens are numerous, free, sterile, inserted in the torus between the petaloid bracts and the ovary. The ovary is from six- to nine-celled, each cell containing a solitary, sessile, erect ovule, attached to an axile placenta. The style is elongated, splitting into six, seven, eight, or nine branches, stigmatose on the edges. The fruit, a collection of from six to seven drupes, forms clusters, which are as large as a man's head, and stands at first erect, but when approaching maturity—its weight increasing, and the leaf-stalk, which, having up to that period supported the bulky mass, having rotted away—it hangs down. A plant bears at one time from six to eight of these heads, each weighing, when ripe, about

twenty-five pounds. The drupes are covered outside with hard woody protuberances, formed in the same manner as those of the trunk of *Testudinaria elephantipes*. Each drupe contains from six to nine seeds, but generally seven. The testa is thick, bony; the embryo peripherical, and placed near the hilum.

In habit, the *Phytelephas macrocarpa* resembles the *Corozo colorado* (*Elæis melanococca*, Gærtn.); so much so indeed, that at first sight the two are easily mistaken for each other. Both have trunks which, after creeping along the ground a few yards, ascend, and attain about an equal height. Their leaves also resemble each other; and their fruit grows in a similar way, attached to comparatively short peduncles. The habit, however, is nearly the only link which connects *Phytelephas* with the order of Palms: its simple spadix, its imperfect flower, its indefinite number of stamens, and its embryo situated in the axis of a fleshy albumen, separate it from Palms, and proclaim it (in conjunction with other characters which it presents) a member of Endlicher's class *Spadicifloræ* and Lindley's Alliance *Arales*. Botanists enumerate four Orders as belonging to that great division (*Pistiaceæ*, *Pandaneæ*, *Typhaceæ*, and *Aroideæ*). To *Pistiaceæ* and *Pandaneæ* it cannot belong, because it has an axile placentation. Amongst *Typhaceæ* it cannot be placed, because it has a multiovular ovary. With *Aroideæ* it cannot be associated, because it has a drupaceous fruit. Repelled by these and other considerations from placing it with any of the Natural Orders above mentioned, and finding it impossible to trace out any relationship of it with any other group than the *Spadicifloræ*, we are compelled to adopt the views of Martius, who looks upon it as the type of a new Natural Order (*Phytelephantheæ*).

The uses of the Ivory-plant may, as far as they are known, be summed up in a few words. The Indians cover their cottages with the leaves of it, but only when those of Palms are not procurable, as the latter last much longer than the former. The seed at first contains a clear insipid fluid, with which travellers allay their thirst; afterwards this same liquor becomes milky and sweet, and it changes its taste by degrees as it acquires solidity, until at last it is almost as hard as ivory. The liquor contained in the young fruits turns acid if they are cut from the tree and kept some time. From the kernels (albumen) the American Indians as well as European turners fashion the knobs of walking-sticks, the reels of spindles, and little toys, which are whiter than animal ivory, and equally hard, if they are not put under water; and if they are, they become white and hard when dried again. Bears, hogs, and turkeys devour the young fruit with avidity. Purdie says:—"Enclosing the seeds is a yellow, sweet, oily pulp, which is collected at the proper season (October), and sold under the

name of *Pipa de Tagua*, for one real a pound at Ocaña; a spoonful of it, with a little sugar and water, makes the celebrated *Chicha de Tagua*, said to be the most delicious beverage of New Granada." This statement is difficult to reconcile with the internal organization of the fruit, and requires some emendations. Purdie wrote the letter in which it is contained in July, 1845, after he first saw the Ivory-plant, when he could not know, from personal experience, what took place in October following. He must have gathered it, therefore, from information obtained from the native inhabitants, who, not being versed in botanical terminology, might easily have made a mistake. The "yellow, sweet, oily pulp" can, in my opinion, be nothing save the second state into which the albumen enters, previous to its becoming solid; and I am the more inclined to think that this opinion is correct, as it is borne out to a certain extent by analogy, For in the Isthmus of Panama, and other localities of New Granada, the name of *Pipa* is applied to a beverage prepared from the young albumen of cocoa-nuts, and in a similar way as that described by Purdie. The same author proceeds:—"It has, however, a slightly drastic property. Although this substance contains much oil, it never becomes rancid by keeping, but at the end of nine months it preserves, in a crude state, all its flavour and quality."

Introduced in our gardens by Purdie, the Ivory-plant has already produced flowers in two places,—a male specimen in 1852 at Schönbrunn; a female in 1855, at Kew; and it is from the latter that figs. 3–9 of Tab. 4914 are made. *B. Seemann.*

Tab. 4913. Male and female plant, *much reduced;* the female, flower portion, from the living plant at Kew; the rest from drawings made by Mr. Mark.

Tab. 4914. Fig. 1. Portion of a male spadix and spathe from a dried native specimen, *nat. size.* 2. Stamen, *magnified.* 3. Section of a female spadix, *nat. size.* 4. Single flower. 5. Pistil, the ovary surrounded by numerous sterile stamens. 6. Ovary, with most of the sterile stamens removed. 7 and 8. Vertical and transverse section of an ovary. 9. Ovule, more or less *magnified.* There are besides a seed entire and a section of a seed, ***nat. size.***

Tab. 4915

SAXIFRAGA ciliata.

Fringed Saxifrage.

Nat. Ord. Saxifrageæ.—Decandria Digynia.

Gen. Char. Calyx 5-sepalus, sepalis plus minus inter se et sæpe cum ovario coalitis. *Petala* 5, rariter irregularia, breviter unguiculata, integra. *Stamina* 10, 5 sepalis, 5 petalis opposita; *antheræ* biloculares. *Capsula* calyci adnata vel libera; *carpella* 2, sæpe usque ad stylum coalita. *Semina* numerosa, rugosa vel lævia, in plurimis seriebus disposita. *Spermodermia* ultra nucleum ovoideum non productum.—Herbæ *perennes vel annuæ, sæpissime valde polymorphæ in eadem specie.* Flores *sæpius paniculati vel corymbosi, abortu solitarii. De Cand.*

Saxifraga (§ Bergenia) *ciliata;* foliis ovalibus basi apiceque obtusis subcoriaceis utrinque hirsutis ciliatis crenato-serratis basi amplo-vaginatis, scapo rigido glabro, paniculo cymoso, calyce magno laxo 5-lobo lobis late ovatis serrulatis, petalis ovatis brevi-unguiculatis, ovario libero.

Saxifraga ciliata. *Royle, Illust. Fl. Himal. p.* 226. *t.* 49. *f.* 2. *Walp. Repert. v.* 2. *p.* 365. *Lindl. Bot. Reg.* 1843, *t.* 65.

This, together with *S. ligulata* and the Siberian *S. crassifolia*, so well known in our gardens, are certainly amongst the handsomest and best worth cultivating of our Saxifrages. The two latter are figured in the earlier volumes of the Magazine (*S. crassifolia* at Tab. 193,—*S. ligulata* at Tab. 3406). We follow other authors in publishing this as a species distinct from *S. ligulata;* but it is very doubtful if it be really so. It inhabits the same mountains in Northern India (Himalaya), on the Mussooree and Suen Range, etc.; but, according to Dr. Royle, at lower elevations than the *S. ligulata*. It chiefly differs in its smaller size, more oval leaves (not attenuated at the base), which are hairy all over. Dr. Lindley's *S. ciliata* (Bot. Reg. f. 65) seems exactly intermediate, and we venture to think the two may be safely united as varieties of one and the same species. Although considered hardy, yet, as its flowering season is early in the spring, we find the protection of a frame or a cool greenhouse is necessary for the full development of its blossoms.

May 1st, 1856.

We made the same remark on the *S. lingulata*. They have neither of them the hardy character of the *S. crassifolia*.

Descr. The *root-stock* is large, thick, woody, horizontal, branched. The *leaves* spring from the apex of the branches and from amongst acuminated brown scales, and are patent, spreading, nearly horizontally, on the ground, elliptical, or rarely approaching to obovate, fleshy and somewhat coriaceous, obtuse at both ends, coarsely crenato-serrate, penninerved, hairy on both sides, and strongly ciliated at the margin: *petioles* from half an inch to an inch long, having at the base large, lax, sheathing, membranaceous, concave, ciliated *stipules*. *Scape* arising from the centre of the leaves and crown of the root, glabrous, red. *Flowers* in a cymose panicle, large. *Pedicels* red. *Calyx* large, lax, inferior, greenish, tinged with red, five-lobed; *lobes* large, oval. *Petals* large, white, ovate, on short broad claws. *Stamens* ten, shorter than the petals. *Ovary* quite free, with two, or occasionally three, erect *styles*. *Stigmas* large, capitate.

Fig. 1. Petal. 2. Pistil:—*magnified.*

3.

Tab. 4916.

CATTLEYA Skinneri : *var.* parviflora.

Mr. Skinner's Cattleya : small-flowered var.

Nat. Ord. Orchidaceæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 4700.)

Cattleya *Skinneri;* pseudobulbis valde incrassatis oblongis basi attenuatis, foliis binis oblongis obtusis, pedunculo plurifloro, sepalis oblongis, petalis ovato-rotundatis, labello panduriformi obscure trilobo lobis lateralibus convolutis terminali lato brevi retuso disco canaliculato, columna perbrevi.

Cattleya Skinneri. *Batem. Orchid. Mexic. et Guatem. t.* 13. *Lindl. Bot. Reg.* 1840. *Misc. n.* 83. *Hook. Bot. Mag. t.* 4270.

Var. *parviflora.* Tab. Nostr. 4916.

Cattleya Skinneri; parviflora. *Lindl. MS.*

When Mr. Skinner last returned from Guatemala he brought with him a small packet containing the flowers of three different Orchids, which he found growing "from the same stock." One was *Cattleya Skinneri,* another was a dark crimson variety of *Epidendrum Skinneri,* the third, which was smaller than the first, but larger than the second, he suspected to be a hybrid between them. A plant, apparently identical with the third, is now figured from a specimen in the possession of J. Dillwyn Llewellyn, Esq., of Penllegare. In its pseudobulbs and leaves it is little different from *C. Skinneri,* and it has the same short inflorescence enclosed within a bivalve spathe; but the flowers are different, not half the size, with an acute, not blunt, and emarginate lip, which is whole-coloured, not pallid over all the the lower half. The petals too are acute, not obtuse. In other respects, that is to say, in the smooth surface of the lip and in the column, no difference appears to exist.

Is it probable that this is a wild hybrid, with the origin suspected by Mr. Skinner? We think not. It is true that it appears at first sight to be intermediate in the flowers, but there

is nothing of a middle nature in the pseudobulbs, and its inflorescence is exactly that of *C. Skinneri*, without any tendency to assume the long-drawn form of *E. Skinneri*. Moreover the lip, although acute like that organ in the last-mentioned species, is wholly destitute of the three lamellæ which belong to it. To this may be added, that in the petals of the plant before us there is the same tendency to become lobed which occurs in *Cattleya Skinneri*. On the other hand the pollen-masses appear to be abortive, a circumstance remarked by Mr. Fitch as well as ourselves.

Although, for these reasons, we are unable at present to recognize in this instance the presence of a natural hybrid, we think it a plant the history of which requires further examination. This is to be especially noted, that the origin of the plant which has now flowered, whether or not collected by Warszewicz, as is supposed, has nothing in common with the specimen discovered in 1854 or 1855 by Mr. Skinner. The two cases appear to be wholly independent of each other. *Lindley.*

Fig. 1. Labellum, including the column. 2. Column. 3. Side-view of the labellum :—*magnified.*

Vincent Brooks Imp.

Tab. 4917.

COFFEA Benghalensis.

Bengal Coffee.

Nat. Ord. Rubiaceæ.—Pentandria Monogynia.

Gen. Char. Calycis tubus ovatus globosus turbinatusve, limbus parvus 4–5-dentatus. *Corolla* tubulosa, infundibuliformis, *limbo* patente 4–5-partito, *lobis* oblongis. *Stamina* 4–5, e summo aut medio tubo exserta aut inclusa. *Stylus* apice bifidus, *lobis* rarius concretis. *Bacca* umbilicata, nuda aut coronata, fœta, coccis 2 membranaceo-pergamaceis 1-spermis. *Semen* extus convexum, intus planum, sulco longitudinali notatum. *Embryo* erectus in albumine corneo, *radicula* tereti obtusa, *cotyledonibus* foliaceis.—Arbores *aut* frutices. Folia *opposita*. Stipulæ *interpetiolares*. *De Cand.*

Coffea *Benghalensis;* fruticosa, foliis oblongo-ovatis acuminatis glabris, stipulis subulatis, floribus axillaribus terminalibus sessilibus solitariis binis ternisve, calycis pilosi bibracteati limbo 4-fido lobis brevibus trifidis laciniis subclavatis, corolla hypocrateriformi, limbi lobiso bovatis, antheris linearibus acutis dorso affinis, stylo incluso, stigmatibus bipartitis.

Coffea Benghalensis. *Roxb. Fl. Indic. v.* 1. *p.* 540. *Roem. et Schult. Syst. v.* 5. *p.* 200. *De Cand. Prodr. v.* 4. *p.* 499. *Spreng. Syst. Nat. v.* 1. *p.* 755. *Wall. Cat. n.* 6244. *Wight et Arn. Fl. Penins. Ind. Or. v.* 1. *p.* 435.

A native, according to Dr. Roxburgh, of the mountains of the north-eastern frontier of India, chiefly about Silhet, and from thence brought many years ago to Calcutta, where it was for some time much cultivated, under the idea of its being the real Coffee of Arabia. "It is now neglected, being of an inferior quality, and not productive; however, the number and beauty of its flowers entitle it to a conspicuous place in the flower-garden."—Wight and Arnott, by including it in their 'Flora of the Peninsula,' make it a native of that region, but they give no locality; and they are disposed to consider *C. Travancorensis*, Herb. Madr., and *C. Wightiana* as mere varieties. Indeed, though we have reason to believe ours to be the true plant of Roxburgh (it was sent to us from the Exotic Nurseries of

Messrs. Veitch and Son, Exeter and Chelsea, who received it from Assam, through their collector Thomas Lobb), yet the leaves and flowers are twice as large as Roxburgh's drawing in the collection of the E. I. C.; and the calyx in that drawing is represented as quite truncated and entire; and even Wight and Arnott do not notice the very peculiar calyx-limb, each lobe being deeply divided into two, three, or more clavate or glandular segments, as *described* by Roxburgh, and by Wight and Arnott in the calyx of *C. Wightiana*, which latter however has quite diminutive leaves and flowers, as compared with our plant; but it is not otherwise different.

Descr. A small shrub, with glabrous dichotomous *branches*, and opposite, ovate, acuminate, entire, spreading, remote, almost sessile, submembranaceous *leaves*. *Stipules* subulate. *Flowers* solitary or in pairs at the extremity of the branches, large (in our plant), white. *Bracteas* two, at the base of each flower, subulate. *Calyx*, with the tube turbinate, downy; the limb short, of five laciniated lobes, with their segments clavated, unequal. *Corolla* hypocrateriform: the *tube* slender: the *limb* of five, obovate, spreading lobes. *Anthers* linear, sessile, attached by the back, a little below the acuminated apex, to the mouth of the corolla, the points only visible above the tube. *Ovary* fleshy, two-celled; *style* included. *Stigma* large, bipartite.

Fig. 1, 2. Sessile stamens. 3. Calyx and pistil. 4. Ovary cut through transversely:—*magnified.*

Vincent Brooks Imp.

ARISTOLOCHIA THWAITESII.

Mr. Thwaites's Aristolochia.

Nat. Ord. ARISTOLOCHIACEÆ.—GYNANDRIA HEXANDRIA.

Gen. Char. (*Vide supra*, TAB. 4361.)

ARISTOLOCHIA *Thwaitesii;* erecta suffructicosa paululum basin versus ramosa, ramis velutino-villosis, foliis longe lanceolatis subcoriaceis glabris subtus sericeo-villosis, pedunculis subradicalibus, floribus racemosis oppositis perianthio bis arcte geniculato-flexuoso, limbo oblique truncato obscure 5-lobo intus copioso glanduloso-villoso lobis acutiusculis.

Seeds of this very remarkable *Aristolochia* were received from our valued friend Mr. Thwaites, discovered by him in one of his excursions in the interior of Ceylon, and it flowered in the stove of the Royal Gardens early in March, 1856. It is the handsomest of all the East Indian *Aristolochiæ*, and remarkable as well for the peculiar form of the perianth, as for the long narrow leaves. The flowers emit a fragrant smell, a good deal resembling that of *Caladium* (or *Colocasia*) *odorum*. It appears easy of cultivation and flowered with us in March.

DESCR. From a tuberous *caudex*, or *rhizome*, several fleshy *roots* are emitted, and this caudex bears, above, a cluster of several erect, terete, downy *stems*, about a span high, simple or a little branched only at the base, leafy for their whole length. *Leaves* alternate, four to five inches long, spathulato-lanceolate, with a short sudden acumen, the margins quite entire, the base tapering into a short, terete *petiole;* above glabrous, beneath downy or almost velvety. From the base of the stem, or rather from the top of the rhizome, the *flower-stalks* are clustered, erect, three inches long, bearing a *raceme* of fragrant *flowers*, of which, on each raceme, only one opens at a time; opposite each flower or bud is a *bract*. The *perianth* is very curious in shape, being a long *tube* contracted in the middle, and twice bent like a

swan's neck, obscurely veined; the *pedicel* is long, so that the flowers lie on the ground: the *limb* is obliquely truncate, but exhibiting five, angular, nearly equidistant teeth at the margin: the inside of the limb is yellowish, densely clothed with glandular hairs, while the inside of the tube (or throat) is deep purple. *Ovary* inferior, tapering into the rather flexuose pedicel. *Style* very short, fleshy, deeply three-cleft: the *anthers* lodged (sessile) in pairs at the back of each lobe of the stigma.

Fig. 1. Summit of the ovary, with the three-lobed antheriferous style:—*magnified.*

2
1

Tab. 4919.

ODONTOGLOSSUM HASTILABIUM; *var.* FUSCATUM.

Halberd-lipped Odontoglossum: brown-petaled var.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 4878.)

Odontoglossum *hastilabium;* foliis oblongis coriaceis, paniculæ ramis spicatis, bracteis cymbiformibus acuminatis ovario æqualibus, sepalis petalisque lineari-lanceolatis acuminatis undulatis, labello apice subrotundo-ovato acuto basi auriculis acutis lanceolatis porrectis aucto, lamellis 5 elevatis, columnæ pubescentis alis obsoletis undulatis. *Lindl.*

Odontoglossum hastilabium. *Lindl. in Orchid. Linden. p.* 16. *n.* 51. *Flor. Orchid. Nov.* 1855, *p.* 5. *n.* 7. *Oct.* 1852, *p.* 18. *n.* 51. *Hook. Bot. Mag. t.* 4272.

Var. *fuscatum*, sepalis petalisque intus fuscis.

Collected in Venezuela by Mr. Birschell. Living flowering specimens were sent to us in March, 1856, by Messrs. Jackson and Sons, Kingston Nursery. It proves to be a variety of the *Odontoglossum* figured by us at Tab. 4272, the *O. hastilabium* of Dr. Lindley, with the sepals and petals of a uniform brown colour in the inside; instead of being green, with transverse brown lines.

Descr. A large epiphytal plant. *Pseudobulbs* four to five inches tall, broad and compressed, furrowed, bearing two or more leaves at its extremity, which are linear-oblong, obtuse, subcoriaceous, not distinctly nerved in the recent plant, slightly keeled at the back. *Peduncle*, or *scape*, elongated, arising from the base of a pseudobulb, and within a leaf springing from the root, panicled above. *Panicle* large, branched, many-flowered: at the setting of the branches is a small convex *bract*. *Sepals* and *petals* much spreading, nearly uniform (the petals however being a little shorter and broader, and crisped at the edge and more incurved), lanceolate, acuminate, subfalcate, subconduplicate, chocolate-brown within, outside green; brown at the margin. *Lip*

three-lobed, unguiculate, side-lobes very small, ovate, intermediate ones very broad arrow-shaped, white (the disc red), with the two side-wings falcate, the apex suddenly acuminate, the margin a little crisped; on the disc are several long, sharp tubercles or fleshy projections. *Column* with two, broad, blunt wings, one on each side: *anther-case* hemispherical.

Fig. 1. Column and lip. 2. Pollen-masses.

W Fitch del et lith

Vincent Brooks Imp.

Tab. 4920.

PERNETTYA furens.

Maddening Pernettya.

Nat. Ord. Ericaceæ.—Decandria Monogynia.

Gen. Char. *Calyx* 5-partitus, persistens. *Corolla* globosa aut ovata, ore 5-dentato revoluto. *Stamina* 10, a corolla libera, inclusa, *filamentis* supra basin subincrassatis, *antheris* bilobis, *loculis* apice apertis biaristatis (vel muticis). *Ovarium* depresso-globosum, glandulis 10 subtrilobis hypogynis basi cinctum. *Stylus* brevis. *Stigma* convexum, subquinquelobum. *Bacca* calyce suffulta, 5-locularis, loculis polyspermis. *Semina* minuta, oblongo-ovata.—Fruticuli *Americani, ramosissimi, glabri aut in ramulis setosi, erecti aut procumbentes.* Folia *parva, approximata, persistentia, alterna, ovata, integra aut dentata.* Flores *axillares, plerumque solitarii, pedicellati, nutantes, albi.* Pedunculi *bracteolati. De Cand.*

Pernettya *furens;* fruticosa, ramosa, ramulis pilosis, foliis brevi-petiolatis ovato-lanceolatis coriaceis mucronato-acutis serratis subtus pallidis reticulatim venosis junioribus ciliatis, racemis axillaribus plurifloris, rachi paleaceo-setosa, **corolla urceolato-subglobosa intus hirsuta.**

Pernettya furens. *Klotzsch in Linnæa, v.* 24. *p.* 83. *Walp. Ann. Bot. Syst.* 2. *p.* 1111.

Arbutus? furens. *Hook. et Arn. Bot. Beech. Voy. p.* 33. *De Cand. Prodr. v.* 7. *p.* 580.

Arbutus? punctata. *Hook. et Arn. l. c. p.* 33. *De Cand. Prodr. v.* 7. *p.* 583.

Qued-qued. *Feuill. Obs.* 3. *p.* 36. *t.* 43.

From the collection of Messrs. Standish and Noble, of the Bagshot Nursery, who raised it from Chilian seeds. Its blossoms were in perfection in the open ground in the month of March, and it is consequently a great acquisition, with its bright foliage and close racemes of white waxy flowers, to our evergreen shrubs. It inhabits the neighbourhood of Conception, towards the southern parts of Chili, latitude 37° S. Father Feuillée was the first to detect and describe this plant, led to it perhaps by its properties: "the fruit," he says, "is a reddish-brown berry, which is dangerous when eaten, causing delirium; whence the Indian name (*Qued-qued*), signifying *madness.*" It is singular however that no other author seems to have been acquainted with the plant, except Dr. Arnott and myself, in the Botany of

Beechey's Voyage, where indeed it is described twice over, the *Arbutus? punctata* proving to be the same plant. Mr. Gay, in his 'Flora Chilensis,' entirely omits it. Without a knowledge of the structure of the fruit I fear the genus of the plant must be considered still doubtful. It has the habit of *Gaultheria*, but the calyx is not carnose. Dr. Klotzsch unhesitatingly places it in *Pernettya;* but it is at variance with his characters, for the cells of the anthers are muticous (not "biaristate"), and the flowers are racemose (not on "solitary peduncles").

Descr. A low *shrub*, moderately branched, younger *branches* green, and having older ones brown and glabrous. *Leaves* alternate, an inch and a half long, ovato-lanceolate, rarely subovate, acute and somewhat mucronate, the margins serrated, a little recurved, ciliated when young, above penninerved, dark green, below paler and reticulately veined; *petiole* very short, red. *Racemes* almost sessile, solitary in the axils of several of the upper leaves, and about the same length as they, many-flowered; *rachis* paleaceo-setose; *pedicels* short, white, glabrous, curved downwards, bearing two or three small *bracts* at the base. *Calyx* white, of five, spreading, white, ovato-acuminated and deep *lobes*. *Corolla* white, urceolato-globose, waxy, the faux hairy; the *limb* of five spreading rather obtuse *lobes*. *Stamens* ten; *filaments* much dilated at the base and downy there; *anthers* ovate, forked at the apex, but not aristate, opening by a pore in each acuminated apex in front. *Ovary* globose or slightly depressed, surrounded at the base by a ten-toothed *ring*. *Style* shorter than the corolla, thick, columnar: *stigma* truncated, scarcely lobed.

Fig. 1. Young leaf seen from beneath:—*natural size*. 2. Portion of the rachis of a raceme with one flower. 3, 4. Front and back view of a stamen. 5. Calyx and pistil (the corolla and stamens being removed). 6. Ovary and glandular ring:—*magnified*.

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Tab. 4921.

MASDEVALLIA Wageneriana.

Mr. Wagener's Masdevallia.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. Perianthium clausum; *sepalis* acuminatis v. aristatis, in tubum campanulatum connatis. *Petala* nana. *Labellum* nanum, oblongum, concavum, integrum, cum columna articulatum. *Columna* erecta, linearis, canaliculata. *Anthera* hemisphærica. *Pollinia* duo, *caudicula* brevi.—Herbæ foliis *Pleurothallidis*, scapis *unifloris*. *Lindl.*

Masdevallia *Wageneriana;* parva, cæspitosa, sepalis apice longe cirrhiferis, petalis securiformibus apice bifidis, labello subrhombeo grosse dentato-serrato marginibus inferne integris reflexis, apice appendicula carnosa unguiformi.

Masdevallia Wageneriana. *Linden, Cat.* 1855. *Paxt. Fl. Gard. v.* 3. *p.* 74 (*with woodcut*).

A most lovely little plant, native of Central America, for the opportunity of figuring which we are indebted to Messrs. Rollison, of Tooting Nursery. To be seen to advantage however the flowers must be dissected and magnified, and then the curious form and beauty of the marking are very apparent.

Descr. The little *plants* grow in a tufted manner, and send out fibrous *roots* from the base. *Stem* slender, filiform, sheathed with a few membranaceous scales, terminating in a solitary, spathulate, obtuse, coriaceous, erect *leaf*. *Peduncles* also arising direct from the roots, nearly as long as the leaf, slender, filiform, sheathed with scales, each bearing a solitary, nearly erect or but slightly inclined flower, yellow spotted with red, jointed below the ovary. The three *sepals*, broad, ovate, and each of them terminating in a long cirrhus or tendril-like appendage, are united into a three-lobed cup, tinged with red on the outside and delicately dotted with red within, spreading at the mouth. Within this, and much shorter than the sepals, are the two minute hatchet-shaped *petals*, one on each side, the column erect, bifid at the point. *Lip* also small, a little longer than the column,

and standing nearly parallel with it, rhomboid, substipitate, the margin reflexed below, then spreading into wing-like margins, which are deeply toothed and unguiculate, with a fleshy, recurved apex, like a bird's claw; the whole is sprinkled with red-brown dots. *Column* short, thick, semiterete. *Anther-case* sunk into the clinandrium. *Pollen-masses* two, obovate, glandular at the base.

Fig. 1. Side view, and 2, front view, of a flower. 3. Petals, column, and lip. 4. Lip removed from the flower. 5. Pollen-masses:—*all magnified.*

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W.Fitch del.et lith.

Vincent Brooks Imp.

Tab. 4922.

CLAVIJA ornata.

Elegant Clavija.

Nat. Ord. Myrsineæ.—Pentandria Monogynia.

Gen. Char. Calyx profunde quinquefidus, *laciniis* imbricatis, obtusis. *Corolla* hypogyna, *tubo* brevi, fauce in appendices carnosas, cum *limbi* quinquelobi laciniis obtusis, æstivatione imbricatis sub anthesi patentibus alternas tumente. *Stamina* 5, imo corollæ tubo inserta, ejusque lobis opposita, faucem vix superantia; *filamenta* in tubum connata; *antheræ* extrorsæ, biloculares, trigonæ, in capitulum decemradiatum conniventes, longitudinaliter dehiscentes. *Ovarium* uniloculare, placenta basilari parva. *Ovula* pauca, adscendentim amphitropa. *Stylus* brevissimus; *stigma* abbreviato-bilobum. *Bacca* globosa, unilocularis. *Semina* pauca, placentæ basilari globosæ liberæ inserta, *umbilico* prope basim ventrali, *testa* mucilaginosa. *Embryo* intra *albumen* corneum excentricus; *cotyledonibus* ovatis, planis, *radicula* infera.—Frutices *Americæ tropicæ;* caule *simplici, apice frondoso;* foliis *alternis oblongis, coriaceis, integerrimis v. spinoso-dentatis;* racemis *axillaribus, simplicissimis, strictis;* folio *brevioribus,* bracteis *minutissimis;* floribus *nutantibus, abortu sæpe unisexualibus, albis vel aurantiacis. Endl.*

Clavija *ornata;* foliis subverticillatis elongato-oblongis acutis basi longe angustatis coriaceis spinoso-dentatis, racemis folio triplo quadruplove brevioribus, bracteis subulatis pedicello triplo brevioribus. *DC.*

Clavija ornata. *D. Don, Edinb. Phil. Journ. Jan.* 1831. *p.* 236, *et in Bot. Reg. t.* 1764. *De Cand. Prodr. v.* 8. *p.* 147.

Theophrasta longifolia. *Jacq. Coll. v.* 4. *p.* 136. *Hort. Schœnbr. v.* 1. *t.* 116.

This is really a noble stove-plant, rising with a clear, tree-like stem to a height of ten or twelve feet, and bearing a crown of leaves at the extremity of very large size, together with racemes of bright orange-coloured flowers from the axils of the leaves and from the scars of the fallen leaves or the bare trunk: these racemes are spreading or drooping. The plant inhabits New Granada, and seeds were sent thence to our garden from that country by Mr. Purdie, which have now become fine plants.

Descr. *Stem* erect, unbranched, or branched only at the top, tree-like, marked with the scars of the numerous fallen leaves, the foliage being confined to the summit of the stem, where the crown

cannot be less than five feet across. *Leaves* alternate, one and a half to two and a half feet long, coriaceous, obovato-lanceolate, acuminate, many and coarsely, almost spinosely, serrated at the margin, strongly penniveined, the base tapering gradually into a very short *petiole*. *Racemes* five or six inches long, solitary or two or three together; from the axil of a leaf or from what corresponds with it on the old wood at various points below the leaves, spreading or drooping. *Flowers* numerous, bright orange. *Peduncle* short, and with the *rachis* and *pedicels* yellow. *Calyx* yellow, of five imbricating lobes. *Corolla* subrotate, fleshy, with five spreading, rounded, denticulated lobes, with five large fleshy *glands* at the mouth, which close the faux of the corolla. *Stamens* arising from beneath these glands: the *filaments* united into a tube bearing the extrorse *anthers*, each of two cells, at the top. *Ovary* small, with a short *style*, abortive.

Fig. 1. Flower. 2. Section of the tubular portion of the corolla, showing the glands, stamens, and ovary:—*magnified*.

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Tab. 4923.

ODONTOGLOSSUM MEMBRANACEUM.

Membrane-sheathed Odontoglossum.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 4878.)

Odontoglossum *membranaceum;* pseudobulbis ovatis angulatis, foliis solitariis oblongis in petiolum canaliculatum angustatis, scapo 2–4-floro, bracteis vaginisque membranaceis acutissimis equitantibus, sepalis membranaceis unguiculatis lanceolatis, petalis latioribus oblongis obtusis, labello cordato obtusissimo unguiculato, ungue carnoso cyathiformi pubescente antice bidentato medio tuberculato, processubus 2 ante cyathum elongatis pubescentibus, columnæ pubescentis auriculis rotundatis. *Lindl.*

Odontoglossum membranaceum. *Sert. Orchid. sub t.* 25. *Bot. Reg.* 1845, *Misc.* 60. 10. *Bot. Reg.* 1846, *t.* 34.

A very fragrant Mexican *Odontoglossum*, and Dr. Lindley justly observes that this and *Odontoglossum Cervantesii* may be regarded as among the finest species of the country. He remarks also the great similarity of the two species, and that they may be possibly varieties of each other. I think our plant here figured will confirm that view; it partakes of the character of both without being identical with either: it has the pure white colour and larger flowers, and the shorter teeth on the labellum of *O. membranaceum;* but it wants the spots of the base of the lip, the rounded apex, and has the larger tubercle at the unguis of the lip: in these respects agreeing with *O. Cervantesii*. The species flowers in the stove of the Royal Gardens in April. Both kinds, we believe, are natives of the vicinity of Oaxaca.

Descr. *Pseudobulbs* small, about as big as a pigeon's egg, clustered, ovate, rather compressed, and slightly keeled on two opposite sides; partially clothed with large membranaceous *scales*, as long as or longer than the pseudobulb. *Leaf* solitary, terminal on the bulb, oblong, acute, pergamineous, faintly striated. *Scape* radical, from within a scale at the base of the

bulb, a span high, bearing many rather large, sheathing *scales*, and similar ones on *bracts* are seen at the base of each of the three or four *flowers*. *Pedicels* long. *Sepals* and *petals* pure cream-white, with transverse red spots or lines at their base: the former oval-oblong, the latter broader, ovato-rotundate, all acute. *Lip* large, white, with a yellow *claw*, three-lobed: the base or claw thick and fleshy, bearing a lobe on each side streaked with red, with a tubercle on the disc and a bifid tubercle in front: the terminal lobe very large, broadly cordate, obscurely veined, waved and a little crenate at the margin, the point acute or a little reflexed. *Column* rather large, terete, with a spreading, oblong *wing* standing out on each side, a little below the apex. *Anther-case* hemispherical or helmet-shaped, acute. *Pollen-masses* two, obovate, yellow, attached to a flattened stalk, and that to an oblong *gland*.

Fig. 1. Lip. 2. Column and anther. 3. Pollen-masses:—*magnified*.

TAB. 4924.

RHODODENDRON FALCONERI

Dr. Falconer's Rhododendron.

Nat. Ord. ERICACEÆ.—DECANDRIA MONOGYNIA.

Gen. Char. (*Vide supra*, TAB. 4336.)

RHODODENDRON *Falconeri*; arbor, foliis amplis coriaceis oblongo-ellipticis obovatisve obtusis v. obscure mucronatis supra glabris nitidis impresse reticulatim venosis subtus dense ferrugineo-tomentosis, florum capitulis densis, calyce obsoleto, corollis campanulatis (albis, basi hinc macula purpurea) 8-lobatis, staminibus 13–16, stylo apice incrassato, stigmate magno orbiculari umblicato, capsula elliptico-cylindracea velutina.

RHODODENDRON Falconeri. *Hook. fil. Rhod. Sik. Himal. p.* 11. *tab.* x., *in Journ. Hort. Soc. Lond. v.* 7. *p.* 76.

RHODODENDRON venosum. *Nutt. in Hook. Kew Gard. Misc. v.* 5. *p.* 364.

The spring of the present year has been eminently favourable to the production of blossoms on the Himalayan Rhododendrons (in general however not without protection), and our present and succeeding numbers will give proof of this statement. *R. Falconeri* has flowered this season for the first time in Europe; and in two places,—with Messrs. Standish and Noble, who obligingly sent the plant to us to be here figured, from an open frame at Bagshot, without glass, only covered by a mat at night; and with Mr. Fairie, of Mosely Hill, near Liverpool.

It is one of three noble species of Sikkim (*R. argenteum*, Hook. fil. and *R. Hodgsoni*, Hook. fil., being the second and third), which belong to a group or division thus characterized by Dr. Hooker: "Calyx 0. Corolla broadly bell-shaped, ten-lobed. Stamens eighteen or twenty (rarely ten). Ovary usually hairy or viscid or both, many-celled.—Trees with large leaves, and white or pale-coloured, densely clustered flowers. *R. Falconeri*, even independent of its flowers, is a very striking plant, from the size and beauty of the foliage, which its discoverer

compares to those of the rusty-leaved variety of *Magnolia grandiflora*, but the green is of a much deeper hue. It inhabits the summit of Tonglo Mountain, Eastern or Sikkim-Himalaya, at an elevation of 10,000 feet above the level of the sea; and, as may be expected, we have found it stand the winter in the open air; but in a climate subject to dry, piercing, east winds at the flowering season, it is in vain to expect blossoms; and even the young branching shoots are liable to be killed, unless some kind of protection be afforded at the season of blossoming. Mr. Booth sent the same species to Mr. Nuttall, from Bootan, and he has called it *R. venosum*.

Descr. Our *plants* have at present only attained a height of three to four feet; but on their native mountains they are trees thirty feet in height, with trunks often two feet in diameter, and branching from the base. Young branches thick and downy, bearing the spreading foliage at the extremity, and glutinous, woolly leaf-buds enveloped in imbricated scales. The *young leaves* are all over woolly with ferruginous down: the fully formed ones are eight to ten inches, and even a foot in length, coriaceous, thick, elliptical or obovate, obtuse at the base and at the apex, but with the latter submucronate; the upper surface naked, dark, glossy green, penninerved, and reticulatedly veined (the veins sunk), beneath prominently veined and densely clothed with more or less bright rusty-coloured down, the down often deciduous on the veins. *Petioles* not more than an inch long, but very thick and slightly transversely wrinkled, glabrous. *Flowers* collected into a large *head*, numerous, white, and with a dark purple or chocolate-coloured spot at the superior base within, conspicuous also externally. *Calyx* obsolete, of five minute lobes, quite concealed by the base of the corolla. *Corolla* campanulate, large (three or four times as large as those in the figure above quoted, but like them in other respects), eight- or ten-lobed at the moderately spreading limb; lobes rounded, obtuse. *Stamens* twelve or sixteen, shorter than the corolla, declined: *filaments* subulate, woolly below: *anthers* small, brown. *Ovary* pyramidal, very woolly and glutinous, sixteen-celled, with as many small glands on the outside at the base: *style* geniculated above the middle, thence thickened upwards. *Stigma* very large, nearly orbicular, umbilicated. *Capsule* elliptical, cylindrical, downy.

Fig. 1. Stamen. 2. Flower:—*nat. size.* 3. Pistil and indistinct calyx. 4. Transverse section of ovary:—*nat. size.* 5. Fruit:—*nat. size.*

Tab. 4925.

PTERIS HETEROPHYLLA.

Variable-leaved Pteris.

Nat. Ord. Filices.—Cryptogamia Filices.

Gen. Char. Sorus marginalis, linearis, continuus. *Indusium* marginarium, scariosum, angustum.—Rhizoma *subglobosum*. Frondes *fasciculatæ, coriaceæ aut herbaceæ, lobatæ, sæpissime pinnatim divisæ*. Venæ *pinnatæ, crebræ, simplices, sæpius uni-bifurcatæ, tenues, venulisque apice obtuso libero terminatæ, internæ aut elevatiusculæ*, venulis *parallelis rarissime divergentibus. Presl.*

Pteris *heterophylla;* frondibus (vix pedalibus) ovatis bi- subtri-pinnatis apice simpliciter pinnatis, pinnis pinnulisque oppositis, sterilium pinnulis subobovatis basi inæqualiter cuneato-attenuatis profunde serratis, fertilium pinnulis oblongis apice grosse-dentatis, rachibus anguste alatis, soris oppositis.

Pteris heterophylla. *Linn. Sp. Pl. p.* 1534. *Sw. Syn. Fil. p.* 101. *Willd. Sp. Pl. v.* 5. *p.* 394. *Spreng. Syst. Veget. v.* 4. *p.* 76. *Fée, Gen. Fil. p.* 125 *et* 126. *Agardh, Sp. et Gen. Pterid. p.* 15.

Adiantum hexagonum. *Linn. Sp. Pl. p.* 1560.

Adiantum foliis hexagonis. *Plum. Fil. p.* 84. *t.* 37.

Adiantum pinnis hexagonis furcatis. *Pétiv. Fil. v.* 94. *t.* 10. *f.* 2 (*fide Willd.*).

Ruta muraria major, etc. *Sloan. Jam. Hist. v.* 1. *p.* 92. *t.* 53. *f.* 2.

From the Royal Gardens of Kew, where it was lately received, through Mr. Wilson, from Jamaica, gathered in moist woods, Westmoreland County. Sloane gives the Orange River and Rio d'Oro, in the middle of the island, as the locality: we possess specimens also from Dr. Macfadyen; but it does not appear to be an abundant species, or it is much overlooked by collectors. Plumier gives only one station for it in St. Domingo, viz. "un endroit que les Boucaniers de l'Isle appellent *le fond épineux*, en venant des Anses à Pitre au quartier de Leogane." I have also a solitary specimen gathered near Rio Janeiro by the late Lady Calcott. Mr. J. Smith possesses a specimen, gathered by Linden in the island of Cuba. It is a very distinct and well-marked species, reminding one in the size and composition of the frond, in the larger and longer fertile fronds, and in the contracted

fertile pinnules with the opposite parallel sori, of *Cryptogramma crispa*. I possess a somewhat allied and I believe new species of this from Tweedie, South Brazil, with the copious fertile pinnules, as narrow as, and a good deal resembling, an *Onychium*.

Descr. The *root* consists of fibres springing from a very short, knotted, woody *caudex*. Fronds tufted, ovate, bipinnate or, in the more luxuriant specimens, subtripinnate, submembranaceous, glabrous; *pinnæ* and *pinnules* opposite or mostly so. Sterile fronds (including the naked, slender *stipes*) scarcely a span high. *Pinnules* somewhat ovate or more frequently obovate, coarsely and acutely serrated, tapering below into an oblique, cuneate base: *veinlets* terminating below each serrature, and clavate. Fertile fronds taller than the barren, sometimes a foot high: their *pinnules* oblong or almost linear-oblong, their sides nearly parallel and occupied by the opposite sori, and their rather narrow *involucres*, of which the sporangia almost meet at the costa; the apex alone coarsely incised, with a few (one to three) erect teeth. Under a magnifying power a few minute hairs may be seen at the base of the under side of the fertile pinnules, and the rachises are everywhere slightly winged or margined.

Fig. 1. Fertile pinnule. 2. Sterile pinnule:—*magnified*.

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Tab. 4926.

RHODODENDRON Hookeri.

Dr. Hooker's Rhododendron.

Nat. Ord. Ericeæ.—Decandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4336.)

Rhododendron *Hookeri;* fruticosum erectum, foliis coriaceis glaberrimis rigidis oblongo-ovalibus obtusis longe petiolatis basi rotundatis subtus glaucescentibus pinnatim nervosis, nervis furfuraceo-pubescentibus, corymbis multifloris, calyce amplo campanulato obsolete et inæqualiter lobato, corolla campanulata lobis emarginatis, staminibus 10, capsula cylindraceo-ovata glabra 7–8-loculari, seminibus lanceolatis marginatis apice laceratis. *Nutt.*

Rhododendron Hookeri. *Nutt. in Hook. Kew Gard. Misc. v.* 5. *p.* 359.

From the garden of Mr. Fairie, of Mosely Hall, near Liverpool, where it flowered in April, 1856. It is one of the many new Rhododendrons which rewarded Mr. Booth's researches in Bootan, and which have been so successfully reared from seed by the veteran botanist Nuttall, at Nuttgrove, Rainhill, near Prescott. It is really a handsome and brilliant species, forming, along with *R. eximium*, Nutt., "the entire thickets upon the Oola Mountain of Bootan, on the north slopes of the Lablung Pass, accompanied by *Pinus excelsa;* elevation above the sea-level 8000 to 9000 feet, the frost and snow at that time, about the 20th December, being very severe and continuous." Mr. Nuttall observes it is allied to *R. Thomsoni*, but differs in the leaves and other characters, as well as in the more numerously-flowered corymb.

Descr. "A tall, erect *shrub*, twelve to fourteen feet high (on its native mountains), with a trunk three to four inches in diameter. *Branches* covered with a whitish-yellow, polished *bark*. *Flower-buds* large, the scales dilated and retuse, externally appearing as if varnished, internally silky. *Leaves* smooth, very thick and coriaceous, apiculate, oblong or oblong-oval, obtuse at both extremities, beneath glaucous, elegantly and curiously pinnatedly nerved, the nerves or vessels in right lines marked at regular

distances by globular tufts of white chaffy scales, which when abraded leave behind brown fibrous scars, resembling the bases of the sori in Ferns, both in texture and colour. *Leaf-bud scales*, in growing plants, linear-oblong, much elongated, and often of a brilliant scarlet. *Leaves* three to five and a half inches long, and from one to one and a half inch wide; during winter very much curled back, so that the edges nearly meet the midrib. *Petioles* thick and stout, about an inch in length. The *flowers* as large as those of *R. Thomsoni*; the lobes five, deeply bilobed. *Stamens* ten, smooth: the *anthers* with oblique pores. *Corymb* ten- to fifteen-flowered, the *peduncles* reflected. *Calyx* very large, campanulate, coloured, unequally and irregularly five-lobed, the two back lobes the largest, all of them shallow. *Capsule* about an inch long, seven- to eight-celled, two-thirds covered by the persistent coriaceous calyx, light brown, cylindric-ovate, the *cells* acute, placental, dissepiments very thick and rounded. *Seed* lanceolate, light brown, with a margin chiefly on one side, and the summit torn into several threads." *Nutt.*

Fig. 1. Portion of a leaf, with villous scale. 2. Scale removed from a leaf. 3. Stamens. 4. Calyx and pistil. 5. Transverse section of ovary:—*magnified.*

W Fitch del. et lith.

Vincent Brooks Imp

Tab. 4927.

COLLINSIA verna.

Vernal Collinsia.

Nat. Ord. Scrophularineæ.—Didynamia Angiospermia.

Gen. Char. Calyx profunde 5-fidus, campanulatus. *Corollæ* declinatæ, *tubus* postice basi gibbus, *limbi* labium superius bifidum lobis erecto-replicatis, inferius lobo medio complicato genitalia includente, lateralibus patentibus. *Stamina* declinata, antherarum loculis apice confluentibus, staminis quinti rudimentum breve. *Stylus* apice minute subcapitato-stigmatosus. *Capsula* ovata vel globosa, septicide bivalvis, valvulis membranaceis bifidis. *Semina* ovoidea, majuscula, dorso convexa, facie concava, *testa* læviuscula.—Herbæ *annuæ, Boreali-Americanæ, erectæ, decumbentes vel laxe ramosæ.* Folia *opposita, rarius ternatim verticillata.* Flores *in axillis foliorum floralium oppositorum falso verticillati*, cymarum *nempe* pedunculus communis *subnullus*, pedicelli *uniflori ebracteolati elongati vel rarius brevissimi, singuli* bractea *parva vel foliacea suffulti.* Corolla *cærulea, violacea vel subrosea ;* labio *superiore pallido vel albo. Benth. in De Cand. Prodr.*

Collinsia *verna ;* glabra vel superne subpuberula, foliis infimis cordato-orbicularibus sublonge petiolatis, caulinis ovatis sessilibus crenato-serratis, supremis bracteæformibus quaternatim verticillatis linearibus, pedicellis folio longioribus, calycis laciniis lato-lanceolatis ciliatis, corollæ labio superiore albo profunde bifido lobis divergentibus inferiore cæruleo.

Collinsia verna. *Nutt. in Journ. Acad. Philad. v.* 1. *p.* 190. *f.* 1. *Gen. of N. Am. Plants, v.* 2. *p.* 46. *Benth. in De Cand. Prodr. v.* 10. *p.* 318 (*excl. Syn. of Sweet, Brit. Fl. Gard. v.* 3. *t.* 220). *Gray, Bot. of N. U. States. p.* 297.

Antirrhinum tenellum. *Pursh, Fl. Am. Sept. v.* 2. *p.* 421.

This lovely annual is quite new to our gardens,* and is no less interesting from the beauty of its flowers (the upper lip pure white, the lower a rich azure-blue) than from its being the species on which the excellent Nuttall founded the genus: and it is from Mr. Nuttall himself that we received the plants from which our drawing is made, accompanied by the following note: —"I send you young plants of *Collinsia verna*. This, like the rest of the genus, is an annual, but of singular beauty, and has

* The *Collinsia verna* of Don, in Sweet's 'Flower Garden,' vol. iii. tab. 220, is clearly the *C. grandiflora*, Lindl. (Bot. Reg. t. 1107), from Oregon.

always with me been a favourite, as it is the first genus I ever attempted to describe, and dedicated to an old friend and accurate botanist, Zaccheus Collins, Esq., of Philadelphia, long since dead. I found it in my first journey into the western interior of America (1812), growing in rich and rather shady alluvial lands betwixt Franklin and Erie, in West Pennsylvania, which appears to be near upon its eastern limit. From my friend Professor Short I have it from near Lexington, Kentucky; it is also common in Missouri, but ceases long before arriving at the Rocky Mountains, at the sources of the Platte, where the climate becomes too dry for it. The seeds I received by post from Dr. Short were collected in his garden on the 1st of June, last year, 1855; on the 25th of June I had some of them already planted, but none came up until the month of August, and those unfortunately were all but *one* devoured by snails. I planted more seeds in September, and from those have arisen, with a good many others, the plants I send. I put them out-of-doors in pots defended by open wide-necked glass shades, in which way they do better than in a frame or greenhouse. The winter or autumnal young plants endure the severe winters in Kentucky perfectly well, and there begin to flower about the 1st of April."

Our plants flowered in a cool frame early in April and continued blooming for a long time. Treated as a hardy annual it will prove, when sufficiently abundant, a charming bedding-out species.

Descr. Annual Our native specimens in the Herbarium are generally small and straggling. Cultivation improves the plant exceedingly; it then grows more erect, stouter, is from a span to a foot high, and bears a succession of flowers, like the *Pentstemons*. *Stem* opposite, terete; *branches* glabrous, the extremities only being a little downy. *Leaves* glabrous: *radical ones*, between cordate and orbicular, on long petioles; *cauline* ones sessile, ovate, crenato-dentate, rather obtuse; supreme leaves or *bracteas* in whorls of four, linear and entire. *Pedicels* solitary and axillary from the leaves, sometimes from the lowest pair of cauline or sessile leaves. *Calyx* two-lipped, of five, deep, broad-lanceolate, acute, ciliated segments. *Corolla* large in proportion to the plant: *upper lip* snowy-white, bipartite: the lobes rather diverging, retuse: *lower lip* bright azure-blue, with white rays: middle lobe obsolete, forming a plica, which receives the stamens and style: side lobes conspicuous, emarginate.

Fig. 1. Calyx and pistil:—*magnified.*

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Tab. 4928.

RHODODENDRON CAMPANULATUM

var. WALLICHII.

Bell-flowered Rhododendron; Dr. Wallich's var.

Nat. Ord. Ericeæ.—Decandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4336.)

Rhododendron *campanulatum*; frutex dense ramosus, ramulis foliis petiolisque magis minusve ferrugineo-tomentosis, foliis brevissime petiolatis ellipticis obovatisve acutis coriaceis basi cordatis supra glaberrimis subtus pilis articulatis ferrugineis sparsim tomentosis, floribus 6–10 laxe capitatis pallide roseis, pedunculis elongatis, calyce obsoleto 5-lobo, corollis lato-campanulatis, staminibus 10, ovario 5–8-locularibus.

Rhododendron campanulatum. *Don, in Wern. Trans. v.* 3. *p.* 410. *Sw. Bot. Fl. Gard.* 2. *p.* 241. *Wall. Cat. n.* 756. *De Cand. Prodr. v.* 7. *p.* 761. *Andr. Bot. Cab. t.* 1944. *Hook. Bot. Mag. t.* 359. *Hook. Fil. in Journ. of Hort. Soc. Lond. v.* 7. *p.* 78.

β, foliis subtus pilis articulatis ferrugineis sparsim tomentosis, subglabris, corollis immaculatis. (Tab. Nostr. 4928.)

Rhododendron Wallichii. *Hook. Fil. Rhod. Sik. Him. t.* 64. *t.* 5.

Native of the interior of Sikkim-Himalaya. When Dr. Hooker prepared his description on its native mountain he considered this to be a new species, which he named after our lamented friend Dr. Wallich, not being then aware of the sportive nature of *Rhododendron campanulatum*, of which he afterwards, and no doubt justly, considered it to be a mere variety, with the rusty down of the foliage nearly obsolete; and as such we represent it here, from plants raised at Kew from Himalayan seeds, and which blossomed in May, 1856.

In this variety the petioles of the leaves are deeply tinged with red, and the scales of the leaf-bud are also red,—characters

which add in no slight degree to the beauty of the plant. These differences pointed out, we may refer to our representation and description of the normal features of the species at Tab. 3759 of this Magazine. We here add some dissections which are wanting in that figure.

Fig. 1. Portion of the under side of a leaf. 2. Branched pubescence of the same. 3. Stamen. 4. Calyx and pistil. 5. Transverse section of the ovary: —*magnified.*

W Fitch del et lith.

Vincent Brooks imp

Tab. 4929.

CALCEOLARIA violacea.

Pale-purple Calceolaria.

Nat. Ord. Scrophulariaceæ.—Diandria Monogynia.

Gen. Char. *Calyx* basi ovario brevissime subadhærens, 4-partitus, laciniis æstivatione valvatis. *Corolla* subperigyna, *tubus* subnullus, *limbus* concavus, bilobus, lobis integris, concavis v. calceiformibus, superiore minore inferiorem vulgo inflatum æstivatione ad margines angustissime obtegente. *Stamina* 2, lateralia, prope basin corollæ inserta, addito rarissime tertio postico, deficientium rudimenta nulla; *antheræ* biloculares vel dimidiatæ. *Stylus* simplex, apice non incrassatus, minute stigmatosus. *Ovarium* disco tenui calyci adnato impositum. *Capsula* ovato-conica, septicide dehiscens, *valvulis* bifidis, marginibus inflexis columnam placentiferam nudantibus. *Semina* plurima, sæpius numerosa, striata.—Herbæ, suffrutices *vel* frutices, *Austro-Americani et Novo-Zelandici.* Folia *opposita aut verticillata, rarissime alterna.* Pedunculi *axillares terminalesve, cymoso-multiflori vel rarius uniflori.* Corollæ *flavæ, albæ vel purpurascentes. Benth. in De Cand.*

Calceolaria (§ Jovellana) *violacea;* fruticosa ramosissima minute viscidulo-pubescens, foliis petiolatis ovatis acutis grosse inciso-dentatis basi cuneatis supra hispidulis, corollæ labiis concavis alte connatis, superiore calyce subtriplo longiore inferiore vix longiore, apice brevissime involuto. *Benth.*

Calceolaria violacea. *Cav. Ic. v.* 5. *p.* 31. *t.* 452. *Benth. in De Cand. Prodr. v.* 10. *p.* 206. *Spreng. Syst. Veget. v.* 1. *p.* 46.

Bæa violacea. *Pers. Syn. Pl. v.* 1. *p.* 15.

The present is one of a singular group of *Calceolaria*, distinguished as a genus by Cavanilles (at least in part) under the name of *Jovellana*,—*Bæa* of Persoon. The corollas have the two lips nearly equal, and more or less open; and the anther-cells are adnate. These are however, by general consent, placed in *Calceolaria*, under a section called "*Jovellana.*" Our present species is a native of Valparaiso and Conception, in Chili, and has now been some time introduced to European gardens, where it forms a very pretty greenhouse plant, flowering copiously in May and June. *Calceolaria Sinclairii*, of New Zealand, is one of this *Jovellana* group.

Descr. Suffruticose. *Stem* erect, one to two feet and more high, glabrous or slightly pubescent, much branched. *Branches*

terete, opposite. *Leaves* numerous, small, opposite, ovate or between ovate and cordate, petiolate, lobato-pinnatifid, the lobes acute, inciso-dentate, rather dark green, and with scattered hairs above, pale beneath. *Petiole* shorter than the leaf, channelled above. *Corymbs* terminating the upper branches, and handsome from their number rather than any brilliancy of colour. *Pedicels* hairy. *Calyx* hairy and ciliate, nearly equally quadripartite; lobes ovate, rather acute, spreading. *Corolla* moderately large, subrotund, but depressed, deeply two-lipped, pale yellowish salmon-colour, spotted with purple without and more distinctly within: *lips* nearly equal, half-open, upper one nearly plane, lower one slightly concave, hairy and ciliated at the margin and at the very base within, where the hairs are very long and bristle-like. *Stamens* two: *filaments* very short; *anthers* two, erect and adnate (not divaricate). *Ovary* subglobose, or rather hemispherical, downy. *Style* filiform.

Fig. 1. Calyx and pistil. 2. Lower half of the corolla with stamens:—*magnified.*

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Tab. 4930.

RHODODENDRON Blandfordiæflorum.

Blandfordia-flowered Rhododendron.

Nat. Ord. Ericeæ.—Decandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4336.)

Rhododendron *Blandfordiæflorum;* frutex ramulosus, ramulis gracilibus virgatis lepidotis, foliis lanceolatis acuminatis coriaceis breve petiolatis subtus ferrugineo-lepidotis, capitulis 5–10-floris, floribus pendulis breve pedicellatis, corollæ carnosæ infundibuliformis tubo elongato cylindraceo lobis oblongis obtusis acutisve.

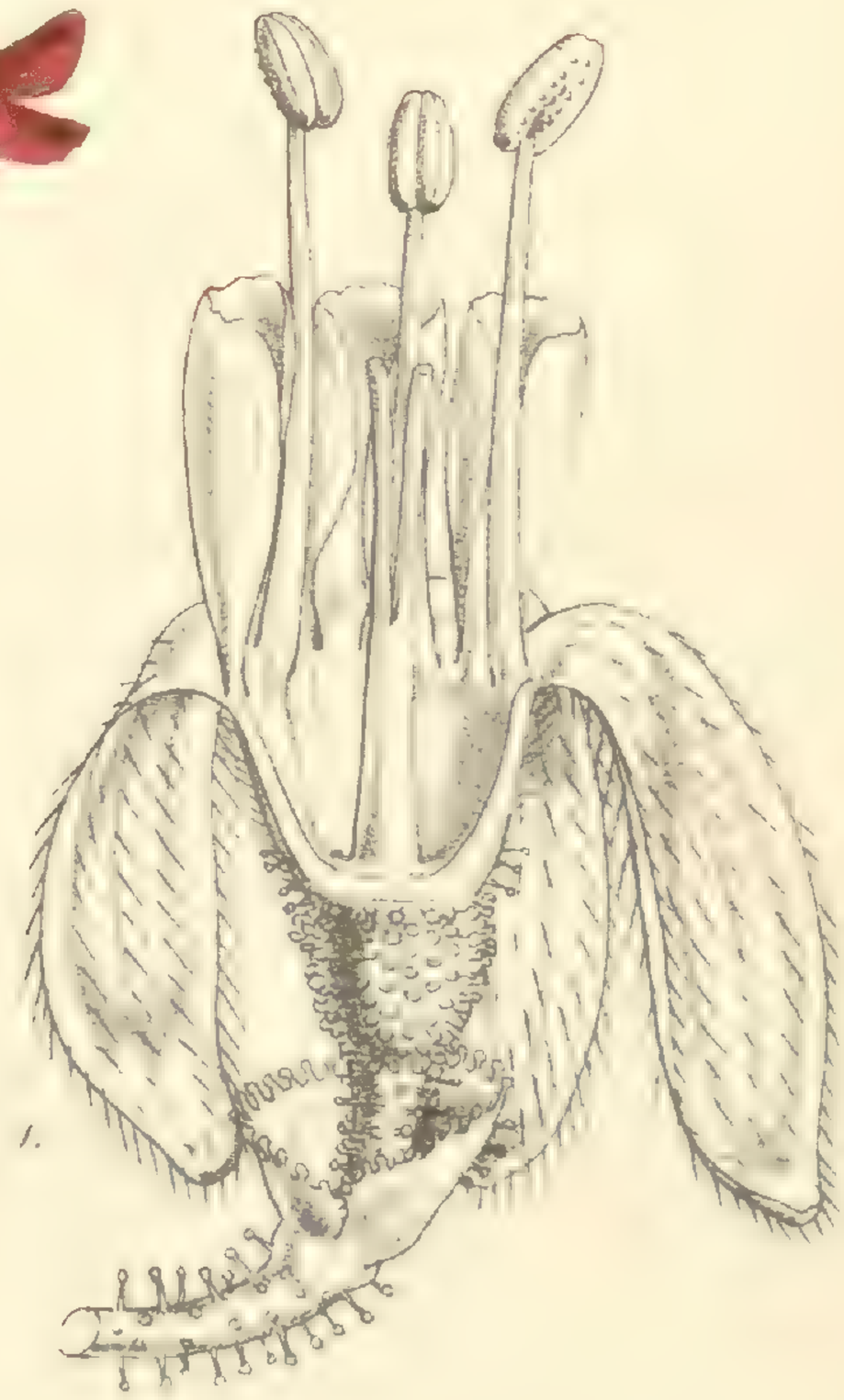
The subject of our present plate is another of Dr. Hooker's discoveries in the Himalaya Mountains of Eastern Nepal and Sikkim, where it is not uncommon at elevations of 10,000 to 12,000 feet, both in valleys and on the mountain-tops and ridges. It forms a slender, rather ugly, sparingly leafy, twiggy bush, with often very ornamental flowers, which are extremely variable and even wholly dissimilar in colour, and often in form. A comparison of Plate VIII. of Dr. Hooker's 'Sikkim Rhododendrons' and of our Plate 4788 with that now figured, would never suggest the probability of the plants there delineated being nearly related, nor were we at all inclined to regard them as such until these and other varieties—all flowering about the same time both in the Royal Gardens and Pleasure-grounds at Kew, in the Horticultural Society's Gardens, and elsewhere—showed so many clearly marked transition states, that we have no alternative but to regard them as very closely allied plants. An examination of Dr. Hooker's extensive *suites* of dried specimens further confirms this opinion; and amongst his unpublished drawings, made from the wild plants in Sikkim, is another form or species with longer, more slender flowers, much more deeply coloured than any which we have seen in cultivation. How far these forms may prove permanent in this country remains to be seen, but

no one who has cultivated the Himalayan Rhododendrons on a large scale can fail to be struck with the numerous sports which have already started off from *R. ciliatum*, *Dalhousiæ*, *campanulatum*, and *arboreum*, and which will no doubt soon be accounted as species by nurserymen.

The more important points besides habit in which *R. Blandfordiæflorum* varies are the form of the calyx-lobes, which, as in *R. cinnabarinum*, are always minute teeth, but of which teeth the upper is sometimes elongate and subulate; the size, form, and colour of the corolla—which varies from one to two and a half inches long, with blunt or acute lobes, and from a pale, sickly green colour to a vivid orange-red—being often green below and red above. The characters of the stamens, pistil, and fruit seem very constant in all the forms.

Descr. A slender shrub, attaining eight feet in height, resembling *R. cinnabarinum* in habit, and, like it, considered poisonous to goats and sheep in the Himalaya, and the smoke of whose wood, when used for fuel in a tent, causes swelling of the face and inflammation of the eyes. *Leaves* two to three inches long, coriaceous in luxuriant plants. *Flowers* two and a half inches long, often green before expansion, and afterwards bearing more or less of a cinnabar or brick-red or orange-red on the upper part of the tube and limb, sometimes altogether green, at others being red, even in the bud. *Stamens* ten. *Ovary* five-celled.

Fig. 1. Portion of under surface of leaf. 2. Scale from ditto. 3. Stamen. 4. Pistil. 5. Transverse section of ovary.



W Fitch del et lith

Vincent Brooks Imp

Tab. 4931.

RIBES subvestitum.

Glandular Californian Gooseberry.

Nat. Ord. Grossularieæ.—Pentandria Digynia.

Gen. Char. *Calyx* 5-lobus, laciniis plus minus coloratis. *Petala* 5, parva, albida, lutea vel rubra. *Stamina* 5, rarissime 6, filamentis liberis. *Styli* 1–2 et 3–4-fidi. *Bacca* unilocularis, receptaculis lateralibus. *Semina* arillata (an in omnibus?), oblonga, subcompressa.

Ribes (§ Grossularia) *subvestitum;* glanduloso-pubescens, ramis rigidis, foliis cordatis tri-quinquelobis crenato-dentatis supra glabris subtus subpilosis, spinis stipularibus 3–4 subulatis mediocribus, petiolis glanduloso-hirsutis. pedunculis 1–3-floris pilosis (pilis glandulosis) bibracteatis, bracteis glanduloso-marginatis, calycis tubo ovarium glandulosum superante laciniis hirsutis oblongis reflexis, staminibus petala duplo superantibus glabris.

Ribes subvestitum. *Hook. et Arn. Bot. of Beech. Voy. p.* 346. *Walpers, Repert. Bot. Syst. v. 2. p.* 357.

A native of California, where it was first detected by the naturalists of Captain (now Admiral) Beechey's surveying voyage; and it has since been sent by Mr. Lobb to Messrs. Veitch and Son, Exotic Nurseries, Exeter and Chelsea, where it bears its flowers in the open ground in April and May, and is rather a striking plant, from the size of the flowers and deep purple-coloured calyx, with pale, erect petals, and the inserted stamens, which give a Fuchsia-like character to their flowers.

Descr. A *shrub*, with harsh, rigid *branches*, and these beset with stipulary *spines*, three or four growing together and spreading, subulate, of moderate length. *Leaves* small, cordate, three- to five-lobed, the lobes crenate, glabrous above, downy beneath, sometimes glandular. *Petioles* hairy, the hairs mixed with pedicellated *glands*. *Peduncles* bearing two or three drooping *flowers; pedicels* clothed with stalked *glands*, and bearing two opposite, oval, concave *bracts*, which are glandular at the margin. Inferior *ovary*, with copious glands *Tube* of the *calyx*

longer than the ovary, scarcely glandular: *limb* of five, long, reflexed, dark purple segments, which are oblong and marked with lines of hairs. *Petals* erect, broadly cuneate, almost white, the sides involute. *Stamens*, with the *filaments*, almost twice as long as the petals, erect: *anthers* oval-oblong, glandular at the back. *Style* as long as the petals, bifid.

Fig. 1. Flower laid open. 2. Petal. 3. Anther, seen from behind: —*magnified*.

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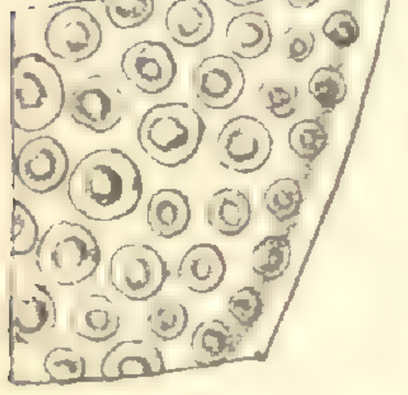

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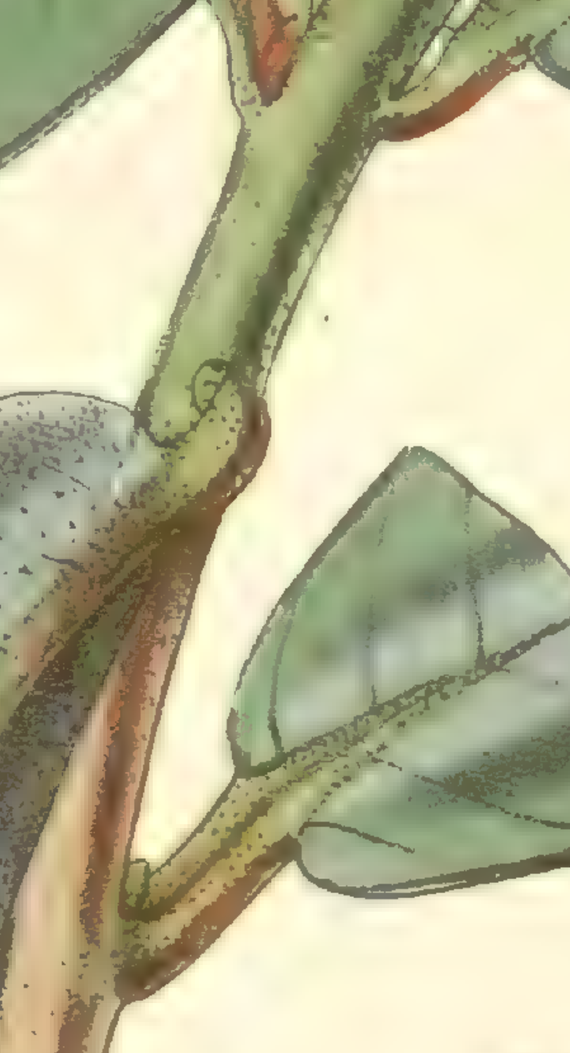

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RHODODENDRON CAMELLIÆFLORUM.

Camellia-flowered Rhododendron.

Nat. Ord. Ericeæ.—Decandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4336.)

Rhododendron *camelliæflorum*; ramulis petiolis pedunculis ovariis foliisque subtus dense ferrugineo-lepidotis, foliis crasse petiolatis coriaceis elliptico-lanceolatis acuminatis coriaceis basi acutis obtusisve, floribus solitariis v. binis breve crasse pedunculatis, pedunculis basi bracteolatis, calycis limbi lobis 5 obtusis, corollæ albæ crasse coriaceæ tubo subinflato lobis explanatis orbiculatis concavis breviore, staminibus 16, filamentis breviusculis ciliatis, stylo crasso curvo, ovario 10-loculari, capsula breviter oblonga lignosa.

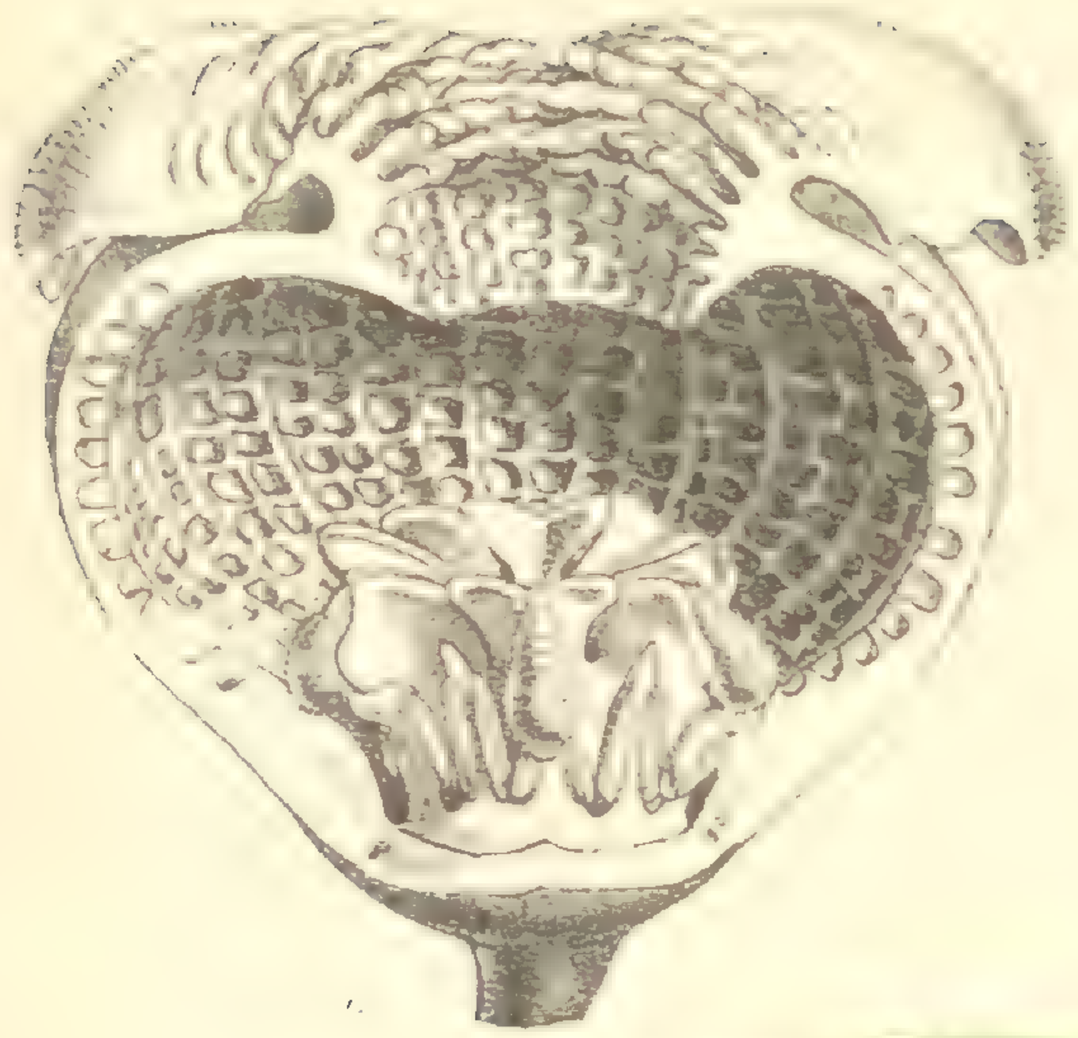
Rhododendron camelliæflorum. *Hook. fil. in Sik. Rhod. t.* 28. *Journ. Hort. Soc. Lond.* 1852, *pp.* 80, 103.

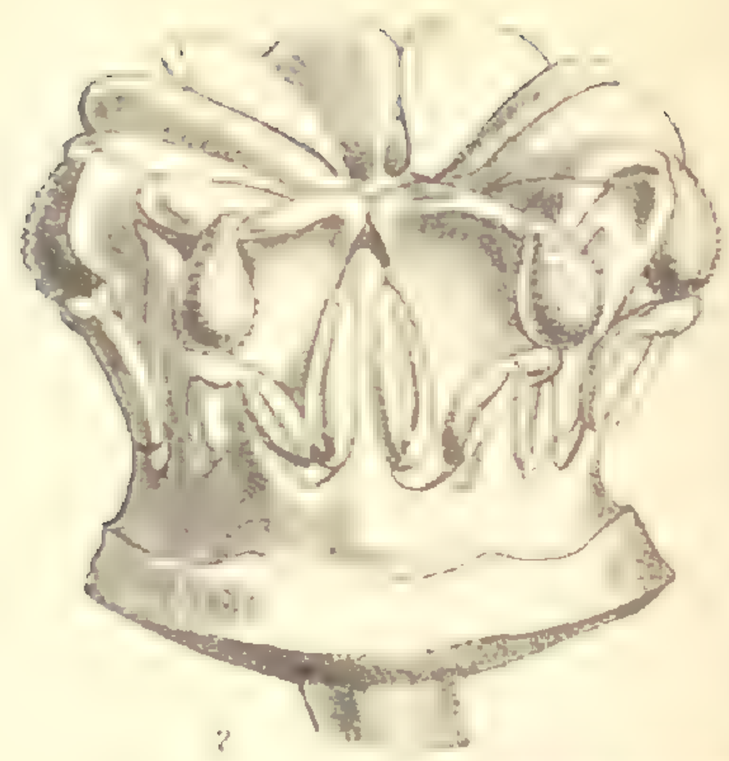
The present plant is another example of the strange dissimilarity in habit and general appearance that prevails throughout the now extensive genus *Rhododendron*. With the exception of the *R. pendulum*, a smaller species from the same country not yet introduced into England, there is none to which *R. camelliæflorum* can be at all compared in the form of its flower and habit combined; the foliage however resembles in many points that of *R. Maddeni* and *cinnabarinum*, and the corolla that of *R. lepidotum*, in form. The plant here figured was detected by Dr. Hooker in the pine forests of East Nepal and Sikkim, at an elevation of 9000 to 12,000 feet; it was also found by the late Mr. Griffith in the mountains of the adjacent province of Bhotan. It generally grew epiphytically on the limbs of lofty trees, whence its branches hung down and were several feet long; but in the looser forests, where light and air were better distributed, it was

found on the ground and on rocks. It has been distributed in gardens under the MS. name of *R. theæflorum*.

Descr. *Stems* two to six feet long, as thick as a goosequill; branchlets, peduncles, calyx, ovary, petioles, and under surface of the leaf densely clothed with brown, appressed, circular, hyaline scales; a few of them are also scattered over the outer surface of the tube of the corolla. *Leaves* two or three inches long, spreading, very thick and coriaceous, deep green above, elliptical, lanceolate, acuminate; petioles short, very stout. *Peduncles* axillary, short, stout, curved, clothed at the base with broad, ciliated bracts. *Calyx* lobes large, broadly oblong, blunt. *Corolla* white, one and a half inch across, of a very thick texture, pure white or with a faint rosy tinge; the tube short, somewhat inflated; lobes broad, expanded, concave. *Stamens* sixteen, large for the size of the flower. *Style* short, clavate, curved.

Fig. 1. Under surface of portion of leaf. 2. Scale. 3. Flower. 4. Stamen. 5. Flower, with corolla removed. 6. Transverse section of ovary. 7. Imperfect fruit:—*all magnified.*





Tab. 4933.

HETEROTROPA asaroides.

Asarum-like Heterotropa.

Nat. Ord. Aristolochieæ.—Dodecandria Monogynia.

Gen. Char. Flores hermaphroditi. *Perigonium* coloratum, urceolatum, tubo late ventricoso, basi cum ovario connato, fauce angustata, annulo introflexo, plicato, limbi trifidi laciniis cordatis, æstivatione induplicatis. *Stamina* 12, disco perigyno ovarii parti liberæ adnato inserta sex exteriora (stigmatibus opposita); *filamentis* triangularibus, antherarum loculis subintrorsis, connectivo submutico interposito sejunctis; sex interiora alterna, *filamentis* nullis, antherarum sessilium loculis extrorsis, connectivo dorsali in acumen lanceolatum producto contiguis. *Ovarium* semi-inferum, sexloculare; *ovula* in loculorum angulo centrali plurima, adscendentia. *Styli* 6, connati, stellatim expansi, singuli obcordati, inferne stigmatiferi; *stigmata* ovato-attenuata, papillosa. *Fructus* . . .—Herba *Japonica*, *habitu* Asari; foliis *binis, profunde cordatis, obtusis, albo-maculatis;* floribus *axillaribus, solitariis v. geminis, breviter pedicellatis, folio abortivo bracteatis, intus sordide fuscis, faucis annulo albido. Endl.*

Heterotropa asaroides. *Morren et Decaisne, in Nouv. Ann. Soc. Nat. v.* 2. *p.* 314. *t.* 10. *Graham, in Bot. Mag. t.* 3746.

Asarum Virginicum. *Thunb. Fl. Jap. p.* 190.

Dr. Siebold introduced this curious plant (too nearly allied to *Asarum*) to our European gardens on his return from Japan. In 1839 it was cultivated in the Edinburgh Botanic Garden, when the late Professor Graham sent a description and a figure, which were published in our sixty-sixth volume of the Bot. Mag. t. 3746. The representation is however so indifferent that we are sure our friends will be glad to see a better one. The plant seems to have disappeared from our English gardens for a length of time, and now has been received again from the Belgian Gardens under the name of *Asarum Japonicum*. We have hitherto treated it as a greenhouse plant, but it is quite likely it would bear our winters in the open air. Its flowering season is April and May.

Descr. *Rhizome* resembling that of *Asarum Europæum*, branched and nodose, the *branches* bearing at the end two pe-

tiolated, deeply cordate, approaching to ovate, entire *leaves*, glabrous, as is every part of the plant, spotted and mottled as in *Cyclamen Europæum*. *Petioles* erect, as long as the *leaves*, deeply channelled in the inside. From the base of these, and arising from a bracteal scale, appears the *flower*, on a very short *peduncle*, inclined or drooping. *Perianth* depresso-globose, of a dark, dull, purplish-green colour, contracted near the base, where it is united to the base of the ovary, and still more contracted at the wrinkled and pale-coloured mouth; the *limb*, of three large, triangular, but blunt segments, spreads horizontally. The internal surface is deeply cellular. *Stamens* twelve, arising from a *disc* which surrounds the nearly superior ovary. *Anthers* almost sessile, alternately smaller, erect, ovate, acuminate; *cells* adnate with the sides of the acute *connectivum*. *Ovary* a short, thick column, the base only incorporated with the perianth, six-celled; *cells* many-ovuled. *Stigma* large, formed of six large rays, spreading horizontally over the entire ovary, each ray with a glandular stigmatic surface at the extremity.

Fig. 1. Flower with the perianth cut through vertically, showing its interior surface, the stamens, the ovary, and large sessile-rayed stigma. 2. Stamens and pistils, removed from the perianth:—*magnified*.

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Vincent Brooks Imp

Tab. 4934.

AGAVE Celsii.

Cels's Agave.

Nat. Ord. Amaryllideæ.—Hexandria Monogynia.

Gen. Char. Perigonium corollinum, superum, infundibuliforme, persistens, limbi sexpartiti laciniis subæqualibus. *Stamina* 6, tubo perigonii inserta; *filamenta* filiformia, æstivatione inflexa, sub anthesi exserta; *antheræ* lineares, versatiles. *Ovarium* inferum, triloculare. *Ovula* plurima, in loculorum angulo centrali biseriata, horizontalia, anatropa. *Stylus* filiformis, exsertus, cavus, apice pervius; *stigma* capitato-trigonum. *Capsula* coriacea, trigono-triquetra, trilocularis, loculicido-trivalvis. *Semina* plurima, plano-compressa; *testa* chartacea, marginata; *raphe* laterali, umbilicum prope basin lateralem *chalazæ* subapicali jungente. *Embryo* cylindricus, axilis, albuminis carnosi longitudine, extremitate radiculari umbilicum spectante.—Herbæ *acaules v. caulescentes, interdum giganteæ, longævæ, sed semel florentes, in America tropica et subtropica cis æquatorem indigenæ, quædam nunc a mortalibus late diffusæ;* foliis *radicalibus carnosis, interdum maximis, marginibus spinosis;* floribus *in scapo radicali bracteato paniculatis, numerosissimis. Endl.*

Agave *Celsii;* acaulis, tota glauca, foliis (bipedalibus) obovato-lanceolatis valde sed brevi anguste acuminatis inæqualiter dentatis dentibus rectis curvatisve simplicibus v. furcatis, scapo (4-pedali) toto bracteato bracteis inferioribus subfoliiformibus superioribus sensim magis subulatis, spica oblonga multiflora, floribus subgeminis, perianthio infundibuliformi (viridi) crassiusculo, limbi laciniis ovatis acutis, filamentis styloque perianthio plus quam duplo longioribus.

This fine *Agave* was received many years ago from the garden of M. Cels, at Paris, as an unknown species, and equally unknown as to its native country—probably Mexico. It does not appear to be anywhere described, but is distinguished from every other with which we are acquainted by its singularly glaucous foliage, more resembling that of some *Aloe* than an *Agave*. It flowered in May and June of the present year, for the first time with us.

Descr. *Stem* none, or scarcely rising above the surface of the ground. *Leaves* one and a half to two feet long, obovato-lanceolate, suddenly and sharply acuminate, nearly plane above, more convex beneath, the margin beset with short spines very

variable in shape, straight or falcate, simple or more or less equally bifid or denticulate at the margin; the whole of a pale very glaucous green colour. *Scape* four feet long, entirely clothed with imbricated *bracts*, leaf-like (but smaller than the leaves) at the base, the root of the bracts gradually becoming smaller and more subulate upwards. *Spike* oblong, simple. *Flowers* generally two from the same, or nearly the same, point, and each subtended by one or two subulate *bracts* from a quarter to three-quarters of an inch long. *Perianth* articulated upon an annular disc, two inches long or nearly so, fleshy, green, sometimes tinged with purple, infundibuliform: the tube furrowed: the *limb* of six, moderately spreading, ovate, acute, slightly concave segments. *Stamens* six: *filaments* twice as long as the perianth, erect, subulate, bearing a long, linear, two-celled *anther*, fixed by the centre of the back, purplish-brown, afterwards green. *Ovary* oblong, furrowed, three-celled: *ovules* in two linear rows in each cell. *Style* as long as the stamens, filiform. *Stigma* obscurely three-lobed.

Fig. 1. Young and fully-expanded flower. 2. Section of ovary. 3. Portion of the margin of the leaf:—*magnified*.

3.
4.
6.
5.

Tab. 4935.

RHODODENDRON Brookeanum.

Sir James Brooke's Rhododendron.

Nat. Ord. Ericeæ.—Decandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4336.)

Rhododendron *Brookeanum;* foliis oblongo-lanceolatis acutis coriaceis glabris subtus concoloribus parce squamulosis subsessilibus, umbellis multifloris laxis, calyce obsoletissimo, corolla (consistentia carnoso-coriacea) lato-infundibuliformi aureo-fulva, tubo elongato basi dilatato superne subcampanulato, limbo amplo 5-lobo undulato-crispato, staminibus tubi longitudine, antheris convergentibus, ovario 5-loculari oblongo tomentoso basi annulo 10-lobato cincto, stylo incluso.

Rhododendron Brookeanum. *Low, in Journ. of Hort. Soc. Lond. v.* 3. *p.* 82, *cum Ic. p.* 83. *Gardeners' Chron.* 1855, *p.* 404, *cum Ic.*

A splendid and well-marked Indian *Rhododendron*, truly worthy to bear the name of the distinguished Rajah of Sarawak, Sir James Brooke, more especially being a native of the territory under the parental sway of that gentleman in Borneo. It is one of the many new Rhododendrons detected and described by Mr. Low in that fertile island, and it has been since introduced by Mr. Thomas Lobb to the nurseries of Messrs. Veitch and Sons, of the Exeter, and King's Road, Chelsea, Nurseries, and exhibited at the Horticultural Shows of 1855, where the plants naturally attracted much attention. "I shall never forget," says Mr. Low, "the first discovery of this gorgeous plant; it was epiphytal upon a tree which was growing in the water of a creek. The head of flowers was very large, arranged loosely, of the richest golden yellow, resplendent when in the sun; the habit was graceful, the leaves large. The roots are large and fleshy, not fibrous as those of the terrestrial Rhododendrons. It is the least common of all the genus in the island, and has many varieties, which differ in having larger flowers and leaves, the former of a more or less red colour. Very high and large trees, in damp forests, are its favourite haunts." Our fine specimen here figured was

received from Messrs. Veitch in April, 1856. *R. Javanicum* (Tab. 4336), the nearest ally to the present, has broader petiolated leaves, more prominent stamens, and the lobes of the corolla not crisped at the margin.

Descr. A *shrub*, epiphytal or terrestrial. *Branches* stout, dark purple. *Leaves* often ample, from six to nine inches long, firm, coriaceous, oblong-lanceolate, acute, the margin a little revolute, the very short *petiole* dark purple, broad and thick: the *colour* a full green above, the same or a little paler beneath, but there sparingly dotted with minute radiated scales. *Umbel* large, lax, many-flowered, terminal. *Peduncles* rather short, glabrous. *Calyx* none, quite obsolete. *Corollas* between campanulate and infundibuliform, large, of a full orange or golden-tawny colour: the texture thick, between fleshy and coriaceous: the *tube* elongated, dilated at the base, spreading at the mouth and gradually widening into the large, five-lobed, crisped or undulated *limb*. *Stamens* ten, as long as the tube: *filaments* downy at the base: the *anthers* linear-oblong, curved and converging over the mouth of the corolla in a remarkable manner. *Ovary* oblong, five-celled, surrounded at the base with a broad, annular, ten-lobed, fleshy disc (as in *R. Javanicum*). *Style* shorter than the stamens. *Stigma* large red.

Figs. 1, 2. Portions of the under side of a leaf, and a separate scale. 3. Stamen. 4. Anther. 5. Pistil. 6. Base of ovary and annular disc:—*magnified*.

Tab. 4936.

RHODODENDRON Edgeworthii.

Mr. Edgeworth's Rhododendron.

Nat. Ord. Ericeæ.—Decandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4336.)

Rhododendron *Edgeworthii;* frutex sæpe epiphytus, ramulis petiolis pedunculis capsulis foliisque subtus dense ferrugineo-villoso-tomentosis, foliis sublonge petiolatis elliptico-ovatis acutis vel acuminatis subcoriaceis rugoso-reticulatis basi obtusis supra nitidis marginibus recurvis, pedunculis 2–3 terminalibus v. ab innovationibus lateralibus, floribus speciosis albis, calycis ampli 5-partiti lobis foliaceis oblongo-obovatis inæqualibus lanuginosis ciliatis, corollæ tubo breviusculo late campanulato, limbi maximi lobis rotundatis venosis crenato-undulatis, staminibus 10 exsertis, filamentis inferne villosis, antheris elongatis, ovario dense tomentoso 5-loculari, stylo gracili basi lanuginoso, capsula oblongo-cylindracea recta obtusa valvis lignosis. *Hook. fil.*

Rhododendron Edgeworthii. *Hook. fil. Rhod. Sik. Himal. tab.* 22, *et in Journ. of Hort. Soc. of Lond. v.* 7. *p.* 77.

In India *Rhododendrons* are found in the temperate regions of the lofty mountains, as well as in the lowlands of the tropics: the latter however are chiefly, if not entirely, in the Malayan Archipelago. Of these we represented a splendid species in our immediately previous Plate (4935), from the plains of Sarawak, Borneo. A no less beautiful species, but of another description, is the subject of our present Plate, a native of the valleys of the inner ranges of the Sikkim-Himalaya Mountains, usually pendulous from trees, sometimes from rocks, elevation 7–9000 feet above the sea-level: and this bears the name of the author's "accomplished and excellent friend P. Edgeworth, Esq., of the Bengal Civil Service, then Commissioner of Mooltan, who has long and successfully studied the botany of Western Himalaya and of north-western India generally."

Dr. Hooker justly observes of this, that it is a "truly superb species, from the size of the flowers and the roseate tinge on a

white ground," and it is no less remarkable from the rich ferruginous down on the branches, leaves beneath, stipules, calyx, etc., and there is a bright play of light on the dark green foliage occasioned by the prominence of the areoles of the very strong reticulations. It flowers in a cool greenhouse in May in the Royal Gardens.

Descr. A *shrub*, often pendulous from trees in its native country; almost everywhere, except on the large corollas and on the upper side of the old leaves, densely clothed with a tawny or ferruginous tomentum, which is easily detached. *Leaves*, on moderately long *petioles*, three to four inches long, ovate-lanceolate, rather finely acuminate, very dark blackish-green, glossy and very strongly and deeply reticulated. *Flowers* very large, showy. *Calyx* large, of five deep, oval, spreading, membranaceous lobes, tomentose at the back, ciliated at the margins. *Corolla* broadly or almost rotately campanulate: the *tube* short, gradually spreading into the very ample, five-lobed *limb*: the *lobes* waved and crenulated: the *colour* pure white, tinged with rose and sometimes also with yellow towards the base. *Stamens* long, but unequal: *filaments* hairy at the base: *anthers* dark purple. *Ovary* very hirsutely tomentose, oval, with a lobed *disc* at the base: *style* longer than the stamens: *stigma* peltate, with teeth like lobes on its disc.

Fig. 1. Stamen. 2. Pistil and calyx. 3. Transverse section of ovary:—*magnified.*

3

2

Tab. 4937.

DENDROBIUM Amboinense.

Long-petaled Amboyna Dendrobium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 4755.)

Dendrobium *Amboinense;* pseudobulbis elongatis gracilibus subfusiformibus, folio solitario oblongo, floribus binis lateralibus, sepalis petalisque uniformibus lineari-lanceolatis longissimis, labello (floris ratione) nano trilobo lobis lateralibus ovato-rotundatis obtusis intermedio subulato.

Dendrobium Amboinense. *Hort. Rollison.*

This remarkable plant, one of the most singular of the many species of the genus *Dendrobium* known to us, was discovered by Mr. Henshall in Amboyna, and imported by Messrs. Rollison, of Tooting Nursery; it flowered in the Orchideous stove in June of the present year (1856). When the plant shall have attained more health and vigour, there is reason to believe that the flowers will be more numerous and larger. We hasten to make known to other Orchid-growers so interesting a species.

Descr. The leaf-bearing *pseudobulbs* are not more than three to four inches long, fusiform and angular, tapering at the base, the younger ones partially clothed with subfoliaceous scales; the *leaf* itself terminal, solitary, oblong, acute, scarcely coriaceous, obscurely marked with parallel lines. In age, as it would appear, these *pseudobulbs* lengthen, lose their leaf, and become naked, stem-like, and jointed, tetragonal below, bulbiform at the very base, four- to six-angled above: from this dry, stem-like pseudobulb the *flowers* appear, in pairs, large, cream-white, soon withering. *Petals* and *sepals* scarcely exhibiting any difference in size or in shape, linear-lanceolate, at first spreading, ere long becoming flaccid and closing over the lip. *Labellum* small, in proportion to the rest of the flower, concave, but scarcely spurred at the base below, three-lobed, lateral lobes broad, ovate, obtuse.

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incurved over the column, the middle lobe subulate; this lip has a yellow tinge, and the middle lobe is edged with a narrow, dark purple line; the concave disc is ocellated with minute, dark orange spots, and there is a pedicellated *gland* or fleshy *tubercle* near the base, and two lesser pairs of *tubercles* nearer the middle lobe. *Column* short, but decurrent where it unites with the base of the lip. *Anther-case* terminal, but sunk into the top of the column, dwarf and imperfect.

Fig. 1. Labellum *in situ*, with the side-lobes enfolding the column. 2. The lip laid open. 3. Column and imperfect anther:—*magnified.*

1.

Tab. 4938.

METHONICA virescens.

African Methonica.

Nat. Ord. Uvularieæ.—Hexandria Monogynia.

Gen. Char. Perigonium corollinum, hexaphyllum, marcescens, *foliola* subæqualia, undulata, caudata, reflexa. *Stamina* 6, perigonii foliolis basi inserta, subhorizontalia. *Ovarium* triloculare. *Ovula* plurima, biseriata, horizontalia, anatropa. *Stylus* terminalis, oblique declinatus; *stigma* trifidum. *Capsula* subglobosa, turbinata, trilocularis, tripartibilis. *Semina* plurima, biseriata, subglobosa; *testa* carnoso-spongiosa, coccinea; *raphe* filiformi, umbilicum basilarem *chalazæ* terminali (nigræ) jungente. *Embryo* in basi albuminis carnosi uncinato-complicatus, extremitate utraque umbilico proxima.—Herbæ *scandentes, in Asia et Africa tropica (et subtropica) indigenæ;* radice *tuberosa;* foliis *sparsis sub ramis, oppositis vel ternatim verticillatis, sessilibus, lanceolatis acuminatis v. in cirrhum productis;* pedunculis *unifloris, axillaribus terminalibusque. Endl.*

Methonica *virescens;* petalis late obovato-lanceolatis refractis apicibus acuminatis retroflexis supra medium undulatis.

Methonica virescens. *Kunth, Enum. Plant. v.* 4. *p.* 277. *Spreng. Syst. Veget.* c. *p.* 135.

Gloriosa virescens. *Lindl. in Bot. Mag. t.* 2539, *et in Hort. Trans. v.* 6. *p.* 277. *Roem. et Sch. Syst. v.* 7. *p.* 366.

Gloriosa superba, *β, Lam. Cycl. v.* 4. *p.* 133. Var. foliis apice tantum undulatis. *Benth. in Niger Fl. p.* 539.

Gloriosa simplex. *Linn. Mant.* 62 (*not Don*).

Gloriosa cærulea. "*Mill. Dict.* 2."

Gloriosa angulata? "*Schumacher et Thon.*"

Gloriosa Abyssinica. *Ach. Rich. Fl. Abyss. v.* 2. *p.* 322.

Clinostylis speciosa. *Hochst. in Fürnr. Flora*, 1844, *p.* 26, *et in Schimp. Herb. Abyss. n.* 1437.

The reasons for preferring the name *Methonica*, Herm., to that of *Gloriosa*, Linn., are clearly given in a note to our *Littonia modesta* (*vide supra*, Tab. 4723) in the words of Dr. Wallich. We wish we could consider the name of the present species unexceptionable; it was probably given by Dr. Lindley to a specimen (such as that seems to be in the figure of Dr. Sims, l. c.

Tab. 2539), grown in the shade. It possesses, in reality, a brighter-coloured and more brilliant flower than the much-vaunted *M. superba;* and we are anxious that justice should be rendered to the species in our present Plate. Blossoming at the same time and in the same stove with *M. superba*, the differences are very apparent and constant. In our plant we have the lamina of the petals broadly obovate; and these are not only refracted, but have the suddenly acuminated apices revolute or retroflexed, and are only undulated at the margins above the middle; whereas in *M. superba* the petals, linear-lanceolate, are refracted indeed, but straight (not revolute at their apices), and they are undulato-crisped for their whole length. *M. virescens* is an inhabitant of Senegal, the Congo; we possess it from the interior of Natal, from Abyssinia, Mozambique, and it seems to be a native of Madagascar. We find it in gardens named *M. Plantii* and *M. Leopoldii.*

Descr. The habit and foliage of this species are quite like those of *M. superba*, but the leaves are smaller, mostly cirrhiferous; when destitute of cirrhi the plant is *G. simplex* of Linnæus. The flowers too have the same general structure as in *M. superba*, but they are larger and more showy. The petals are broadly obovato-spathulate, soon refracted: the apices are suddenly acuminated and always retroflexed or revolute, and the upper half only has the margins undulated; the claw and the lower half are yellow, sometimes with a faint streak of green. *Stamens* and *pistil* (with the curiously geniculated style) as in the Indian species.

Fig. 1. Section of ovary. 2. Stigmas:—*magnified.*

3

Tab. 4939.

SALVIA porphyrata.

Bright red-flowered Sage.

Nat. Ord. Labiatæ.—Diandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4874.)

Salvia *porphyrata;* caule erecto inferne adscendente decumbente tetragono subincano, foliis sublonge petiolatis reniformi-cordatis crenato-lobatis supra glabriusculis subtus pubescenti-incanis, racemo elongato, verticillastris 4–6-floris, bracteis lanceolato-ovatis parvis, pedicellis brevibus, calyce labio superiore truncato bidentato (denticulo intermedio obsoleto) inferiore bifido, corollæ pubescentis intenso-coccineæ calyce triplo longioris labio superiore brevi recto bifido, inferiore amplo trilobato, lobis lateralibus ovatis intermedio maximo bifido, staminibus exsertis loculis omnibus polliniferis.

Salvia porphyrata. "*Decaisne, in Rev. Hortic.* 4 *Sér. vol.* 3. *p.* 301. *f.* 16." *Garden. Chron.* 1854, *p.* 694.

This very pretty Sage was received from Mr. Thomson, of Ipswich, under the name of *Salvia Roemeriana* (Scheele, in Linnæa, vol. xxii. p. 586), and consequently as a native of Texas. The name is unquestionably an error, and thus doubt is naturally thrown upon the locality. From another source we learn that it bears the name of *S. porphyrantha* of Decaisne, in a work which we have not to consult, but it sufficiently accords with the brief notice of that plant in the 'Gardeners' Chronicle;' but the native country seems unknown. The miserable description we have of *S. crenata*, Mart. et Gal., a Mexican species, accords sufficiently with our plant in the leaves and colour of the flowers; but it is impossible to decide the point with only two lines of diagnosis in a genus of considerably above five hundred species. It is probably not hardy, though it flowers in the open air, in July; and it will probably make a valuable bedding-out species, the plants being humble in stature, and the flowers copious and

brilliant. Its leaves in shape very much resemble those of the Ground Ivy, *Glechoma hederacea.*

Descr. *Plant* a span or at most a foot high, decumbent below, then erect. *Stem* and *branches* tetragonous, slightly hoary, purple-green. *Leaves* all on long footstalks, cordate or between cordate and reniform, lobato-crenate at the margin, venoso-reticulate, glabrous or only slightly downy above, beneath hoary, indistinctly pilose on the nerves, hair or down mixed with minute shining points. *Raceme* terminal, elongate. *Whorls* four- to six-flowered (the uppermost two-flowered). *Bracteas* small, ovato-lanceolate. *Pedicels* short. *Calyx* green, tipped with deep purple; upper lip plain, truncated, two-toothed, the intermediate tooth being obsolete: lower lip bifid, with two, subulate, erect segments. *Corolla* thrice as long as the calyx, rich scarlet, downy: the *tube* compressed, slightly curved or arched: upper *lip* (or *galea*) short, straight, bifid: lower *lip* large, three-lobed, deflexed, lateral lobes ovate, obtuse, spreading, intermediate, subrotundate, cleft. *Anthers* exserted beyond the galea; the branches of the connections each bear a polliniferous cell. *Ovaries* four, on a large fleshy gland. *Stigma* unequally bifid.

Fig. 1. Flower. 2. Stamens. 3. Pistil:—*magnified.*

Tab. 4940.

ARGYREIA HIRSUTA.

Villous Argyreia.

Nat. Ord. Convolvulaceæ.—Pentandria Monogynia.

Gen. Char. Sepala 5. *Corolla* campanulata. *Stylus* 1. *Stigma* capitatum, bilobum. *Ovarium* biloculare (?), 4-spermum. *Fructus* baccatus, sepalis sæpe intus rubescentibus et induratis cinctus.—Herbæ *aut* suffrutices *Indicæ aut Chinenses* (*except* A.? Abyssinica), *vegetationis aspectu spectabiles, plerumque argenteæ, sericeæ aut tomentosæ. Choisy.*

Argyreia (§ Samudra) *hirsuta;* caule petiolis pedunculis petiolis calycibus corolla tubo pilis patulis strigoso-hirsutis, foliis cordatis mucronatis longe petiolatis subtus villoso-tomentosis, pedunculis folio longioribus uni-pluriforis, floribus subcymosis laxis, bracteis linearibus s. lanceolatis, sepalis ovatis, corollis magnis speciosis, tubo elongato inferne subinflato, limbo amplissimo.

Argyreia hirsuta. *Wight et Arn. Pug. Pl. Ind. Or. p.* 38. *Choisy, in De Cand. Prodr. v.* 8. *p.* 331.

Rivea hirsuta. *Wight, Ic. Plant. Ind. Or. t.* 891.

Argyreia Choisyana. *Hort.*

Beautiful as are many of the tropical *Bindweeds*, we have rarely seen a more beautiful and striking one than the present, trained as our plant is along the rafters of a stove, with bright green, good-sized leaves, peculiarly villous stems, branches, petioles, etc., and its ample bright lilac corollas. We received it from the Paris Garden in 1850, under the name of *Argyreia Choisyana*, a name which we cannot find in any botanical work within our reach; but the plant corresponds in every essential particular with *Argyreia hirsuta* of Wight and Arnott in their 'Pugillus,' and which Dr. Wight afterwards, in his invaluable 'Icones,' figures and describes as *Rivea hirsuta*. His reasons for this change are given by the learned author in vol. iv. of the 'Icones,' under No. 1355, and also his views of reducing a number of the genera of M. Choisy into one; in other words, making *Rivea*, *Argyreia*, and *Lettsomia* to comprise all of the first section of *Convolvulaceæ*, all having indehiscent fruit; viz.

Rivea, recognized by its four-celled capsule, stigmas two, linear, cylindrical or lamellate: *Argyreia*, ovary four-celled, stigmas capitately two-lobed; *Lettsomia*, ovary two-celled, cells two-seeded, stigmas capitately two-lobed. With this view of the genera the plant under consideration will revert to *Argyreia*.

Descr. A climbing plant of very great extent, the herbaceous portion of the *stem* and *branches*, the *petioles*, *peduncles*, *bracts*, *calyx*, and *tube* of the *corolla* excessively villous, with long, spreading hairs; *branches* terete. *Leaves* large, exactly cordate, tipped with a soft mucro, bright green above and scarcely hairy, the margin and whole surface beneath clothed with pale down intermixed with appressed hairs, abundant on the numerous reticulated, prominent nerves. *Peduncle* long and twisted, generally longer than the petiole, bearing, according to the strength and vigour of the plant, one or more *flowers*; in the latter case subcymose, lax (not compact or capitate). *Bracts* in opposite pairs, some distance from the calyx, linear or lanceolate. *Sepals* ovate, somewhat imbricated, erect and appressed. *Corolla* very large, of a beautiful deep lilac colour, subhypocrateriform rather than campanulate; the *tube* long, a little contracted below the limb; the *limb* ample, spreading almost horizontally, indistinctly five-lobed, the broad lobes emarginate in the centre, the edge a little undulated. *Stamens* quite included within the tube. *Ovary* sunk into a large, fleshy, hypogynous disc. *Style* filiform. *Stigma* capitate, bilobed, *lobes* granulated.

Fig. 1. Pistil:—*magnified*.

We take the opportunity of remarking here that Mr. Moore has obligingly assured us that seeds of *Salvia porphyrata* (Tab. 4939) were undoubtedly received from Texas along with those of other Texian plants, such as *Gaura Lindheimeriana*, *Ungnadia speciosa*, etc.

W. Fitch del et lith

Vincent Brooks Imp

Tab. 4941.

LYSIMACHIA NUTANS.

Drooping-flowered Lysimachia.

Nat. Ord. Primulaceæ.—Pentandria Monogynia.

Gen. Char. Calyx quinquepartitus. *Corolla* quinquepartita, subrotata campanulatave, calyce longior, tubo minimo. *Stamina* 5, basi corollæ inserta: *filamenta* in quibusdam basi connata; *filamenta* sterilia interdum totidem ac fertilia: *antheræ* oblongæ. *Capsula* globosa, 5–10-valvis, apice dehiscens, polysperma.—Herbæ *plerumque perennes;* foliis *alternis oppositis vel verticillatis integerrimis:* floribus *axillaribus racemosis, spicatis aut paniculatis. Duby.*

Lysimachia (§ Ephemerum) *nutans;* caule erecto subsimplici, foliis oppositis ternisve lanceolatis integris margine subsinuatis acuminatis glaberrimis basi in petiolum brevem coarctatis, floribus racemosis terminalibus primo congestis demum per florescentiam laxis, bracteolis lineari-subulatis pedicellis subduplo minoribus, calycis tubulosi 5-angularis 5-partiti corolla subtriplo brevioris laciniis lanceolato-linearibus obtusis, corollæ tubuloso-campanulata lobis lanceolato-spathulatis apice eroso-denticulatis, staminibus æqualibus exsertis, stylo subulato. *Duby.*

Lysimachia nutans. *Nees ab Esenb. Del. Sem. Hort. Bonn.* 1831. *De Cand. Prodr. v.* 8. *p.* 61.

Lysimachia atropurpurea. *Hook. Exot. Fl. t.* 180 (*not Linn. et auct., nor the plant there quoted of Commelin*).

Lubinia atropurpurea. *Link et Otto, Hort. Ber. t.* 27. *Sweet, Fl. Gard. Ser.* 2. *v.* 1. *t.* 84.

Coxia. *Endl. Gen. p.* 733.

A South African plant of comparatively recent discovery, having been found in marshy mountains of the Cape district by Ecklon and Zeyher and by Drege, and introduced to the gardens of this country. It was confounded by Link and Otto and Sweet with the Mauritian genus *Lubinia;* but it seems clearly to belong to the "Ephemerum" section of *Lysimachia*, however different from other species of the genus in the size and colour of the flowers. It blossoms in July, and bears the open air well in summer; but the root requires shelter in the winter. The spe-

cific name *nutans* is hardly applicable, for it is only in the young state of the raceme that it droops.

Descr. Perennial, glabrous. *Stem* erect, obscurely four-angled, bearing a few opposite *branches*. *Leaves* opposite, lanceolate, shortly acuminate, tapering into an imperfect *footstalk*, which is semi-amplexicaul, penninerved, paler, and minutely dotted beneath. *Raceme* terminal, spicate, at first drooping, afterwards erect, many-flowered. *Pedicels* very short, bracteated; *bracteas* small, linear-lanceolate. *Calyx* cut almost to the base into five linear-oblong, obtuse, erect segments. *Corolla* large in proportion to the calyx, in shape campanulato-infundibuliform, but cut into five very deep, oblong-cuneate *lobes*, erose or jagged at the extremity; the *colour* a deep bright reddish-purple, the short *tube* minutely dotted within. *Stamens* inserted at the edge of the tube, five, equal: *filaments* much exserted, erect, minutely dotted, purple: *anther* oval, almost black. *Ovary* small, subrotund. *Style* thick, subulate, about half the length of the corolla.

Fig. 1. Flower. 2. Pistil, with a portion of the corolla and stamens. 3. Transverse section of ovary:—*magnified.*

W.Fitch del.et lith.

Vincent Brooks Imp

Tab. 4942.

CODONOPSIS ROTUNDIFOLIA.

Round-leaved Codonopsis.

Nat. Ord. Campanulaceæ.—Pentandria Monogynia.

Codonopsis, *Wall., Endl.—Gen. Char. Calyx* tubo hemisphærico, cum ovario connato, limbo semisupero quinquelobo. *Corolla* summo calycis tubo inserta, carnosula, campanulata, apice quinqueloba. *Stamina* 5, cum corolla inserta: *filamentis* basi sublatioribus *antherisque* liberis. *Ovarium* inferum, triloculare. *Ovula* in placentis ex angulo centrali loculorum plurima, anatropa. *Stylus* inclusus; *stigmata* 3, ovata, crassa. *Capsula* hemisphærica, trilocularis, apice acuto, loculicido-trivalvis. *Semina* plurima, ovoideo-cylindrica. *Embryo* in axi albuminis carnosi orthotropus; *cotyledonibus* brevissimis; *radicula* umbilico proxima, centripeta.—Herbæ *in India septentrionali monticolæ, sæpius gluberrimæ;* caulibus *e caudice lignoso adscendentibus, plerumque volubilibus;* foliis *alternis v. oppositis, petiolatis, crenatis, subtus glaucescentibus v. incanis;* floribus *axillaribus terminalibusque pedunculatis, luteo- v. cæruleo-virescentibus v. purpureis. Endl.*

Codonopsis *rotundifolia;* pilosula, caule volubili, foliis plerisque oppositis petiolatis ovatis subrotundatisve crenato-serratis, pedunculis terminalibus solitariis unifloris petiolo multo longioribus, calycis tubo hemisphærico sulcato lobis late oblongo-ovatis foliaceis obtusis subdentatis patentibus tubo multo longioribus, corolla lobis calycinis sublongioribus urceolato-subgloboso-campanulata, **lobis triangularibus patentibus, capsula basi rotundata.**

Codonopsis rotundifolia. *Benth. in Royle, Illustr. Bot. Himal. p.* 254. *t.* 62.

Wahlenbergia (§ Megasanthes) rotundifolia. *De Cand. Prodr. v.* 7. *p.* 425.

Dr. Hooker, in his account of three species of *Codonopsis*, in his splendid 'Illustrations of Himalayan Plants,' proposes to unite *Campanumœa*, Blume, and the first section of De Candolle's *Wahlenbergia* (§ Megasanthes) with *Codonopsis*, as defined by De Candolle; and we think with much justice, notwithstanding the variable position of the calyx relatively to the ovary or capsule. That our plant is the same as Dr. Royle's we have quite satisfied ourselves; but the leaves are never so rotundate in our specimens, whether wild or cultivated, and his figure being drawn probably and coloured from dried specimens, the flowers are very faulty both in form, size, and colour. Our plants in the Royal Gardens were derived from seeds sent by Dr. Royle from Himalaya.

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Descr. A long, slender, climbing, annual (?), slightly hairy in all the herbaceous portion. *Leaves* petiolated, opposite or rarely alternate, ovate, rather obtuse, sometimes approaching to cordate, sometimes subrotund, more or less coarsely crenato-serrate, penniveined, slightly reticulated. *Peduncles* terminal, slender, single-flowered. *Flower* large, not much unlike that of *Atropa Belladonna*. *Calyx* with a hemispherical, sulcated tube, which is incorporated with the greater part of the ovary: the *limb* consists of five, large, foliaceous, oblong-ovate, entire or nearly entire *segments*, which spread horizontally or are eventually reflexed, obscurely three-nerved. *Corolla* large, urceolato-globose, campanulate, the *tube* inflated: the *limb* of five, spreading, triangular segments; the *colour* yellowish-green, veined with dark purple. *Stamens* quite included, short: *filaments* subulate, much dilated at the base: *anther* linear-oblong. *Ovary*, the lower half (adherent with the calyx) hemispherical, sulcated; the upper half depressed, but in the centre conical, and tapering into the short style: *stigmas* three-lobed, lobes very large, oval, glandular, externally glandulose.

Fig. 1. Ovary and stamens:—*magnified.*

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W Fitch del et lith.

Vincent Brooks Imp

Tab. 4943.

OROBUS Fischeri.

Dr. Fischer's Bitter-Vetch.

Nat. Ord. Leguminosæ.—Diadelphia Decandria.

Gen. Char. Calyx campanulatus, 5-fidus, lobis 2 superioribus brevioribus. *Corolla* papilionacea. *Stamina* diadelpha. *Stylus* gracilis, linearis, apice villosus. *Legumen* cylindricum, oblongum, uniloculare, bivalve, polyspermum. *Semina hilo* lineari.—Herbæ *erectæ*. Stipulæ *semisagittatæ*. Petioli *in setam brevem simplicem desinentes*. Folia *abrupte pinnata, paucijuga*. Racemi *axillares, pedunculati*. *De Cand.*

Orobus *Fischeri*; glabriusculus, caule erecto gracili parce ramoso, foliis unijugis, petiolo perbrevi, foliolis linearibus brevi-acuminatis, stipulis auriculaque subulatis, racemis multifloris pedunculatis secundis, "leguminibus reticulato-venosis 6–7-spermis, seminibus subrotundis fuscis."

Orobus Fischeri, *Sweet, Brit. Fl. Gard. v.* 3. *t.* 289. *Walp. Rep. Bot. Syst. v.* 1. *p.* 723.

Orobus atropurpureus. *Fisch. MSS.* (*an Desf. Fl. Atl.?*)

"Orobella vicioides. *Presl, de Orobella*, 8. *t.* 4. *p.* 28."

That this pretty *Orobus* is the *O. Fischeri* of Mr. Sweet there can be no question. It was introduced to our gardens by the late Robert Barclay, Esq., of Bury Hill, through seeds sent by Dr. Fischer under the name of *O. atropurpurea* of Desf., and it is doubtful if it be not a mere variety of that plant, having the leaves reduced to one pair of leaflets. That seems the only difference, but that is constant in the cultivated samples: and it is a plant that deserves a place in our gardens, is perfectly hardy, and a free-flowerer, and the flowers are highly coloured. Being sent from Russia by Dr. Fischer, Mr. Sweet considers that it is of Russian origin; but there is no such plant in Ledebour's 'Flora Rossica,' and the probability is that its native country is the same as that of *O. atropurpureus*, viz. the south of Italy and opposite coast of Africa.

Descr. *Stem* erect, four-sided. more or less branched, slender and twiggy. *Leaves* on very short *petioles*, consisting of a single pair of narrow, linear, acuminated *leaflets*, with a mucro between

them; they are longitudinally veined, and have a silky pubescence beneath. *Stipules* small, subulate, with a subulate lobe or awn at the base, and with a slight depression at the back, where it is set on to the stem. *Peduncles* solitary, axillary, about as long as the leaves, bearing a *raceme* of eight or ten or more pendent, secund *flowers*, an inch long, of a very rich bright purple-red colour. *Pedicels* short. *Calyx* also short in proportion to the length of the corolla: *upper lip* of two short teeth, *lower* with three teeth or lobes, of which the middle one is longer than the lateral ones, all erect and appressed against the corolla, silky-green, tinged with purple. *Vexillum* large in proportion to the rest of the flower, veined, notched at the apex. *Wings* deeper coloured than the rest of the flower. *Staminal tube* very long: one stamen free. *Ovary* linear, compressed, stipitate: *style* with a brush of hairs beneath the stigma.

Fig. 1. Flower. 2. Vexillum. 3. One of the alæ. 4. Carina. 5. Stamens. 6. Pistil:—*magnified.*

Tab. 4944.

DENDROBIUM Falconeri.

Dr. Falconer's Dendrobium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 4755.)

Dendrobium (§ Dendrocoryne) *Falconeri*; caulibus hic illic ramosis elongatis pendulis gracilibus striatis articulatis geniculis nodosis, foliis paucis parvis 1–3 terminalibus linearibus, pedicellis solitariis unifloris, floribus amplis speciosis, sepalis oblongo-lanceolatis subtortilibus petalisque ovatis æquilongis patentibus apice purpureo-maculatis, labello cucullato limbo vix trilobo ovato acuto undulato integerrimo ciliato disco aurantiaco basi apiceque purpureis, calcare brevissimo.

The sample here figured is only part of a stem, which was 3–4 feet long, with upwards of sixty flowers upon it, and which continued twelve or fourteen days in perfection, was sent to us by George Reid, Esq., of Burnham, Somerset, with the remark that the plant was imported in April of the present year from the mountains of Bootan, elevation 4000 feet, under the name of *Dendrobium Falconeri*, and purchased at an auction in London. It certainly is among the most lovely of the genus, and very distinct from any species we know; nearest akin to the *Dendrobium Macarthiæ* of our friend Thwaites (Bot. Mag. t. 4866).*

Dr. Lindley considers the species to be entirely new, to belong to his section of the genus *Dendrocoryne*, and to come near *D. tetragonum* of All. Cunn. in Bot. Reg. 1839, Misc. 30, and 1841, Misc. 8.

Descr. *Stem*, rather than pseudobulb, long, slender, branched, pendulous, jointed, the joints contracted in the middle, and consequently nodose at their point of junction, striated. *Leaves* few,

* In the description accompanying that plate it was carelessly omitted to be mentioned that both the drawing and description were sent by our excellent friend Mr. Thwaites, who is the author of the name.

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1–3, terminal, very small and insignificant, linear. *Flowers* large, copious upon the branches. *Peduncles* solitary, arising from a geniculation, slender, single-flowered. *Sepals* spreading, oblong-lanceolate, somewhat twisted, acuminate, pale rose-colour, tipped with dark purple. *Petals* equal in length with sepals, but much broader, ovate, acute rather than acuminate, white-tipped, with a broad patch of deep purple spreading horizontally. *Lip* large, cucullate; the *limb* or *lamina* obscurely 3-lobed, cordate, acute, waved; the ground-colour white, the disc orange-yellow, with a large central dark-purple spot, another on the under side corresponding with it, and with the same colour at the tip; the margin is quite entire, but fringed or ciliated. *Spur* short. *Column* short, but decurrent with the spur. *Anther-case* oblong, hemispherical, downy.

Fig. 1. Column and anther:—*magnified*.

1915.

Tab. 4945.

MUCUNA PRURITA.

East Indian Cow-itch or Cowage.

Nat. Ord. Leguminosæ.—Diadelphia Decandria.

Gen. Char. Calyx campanulatus, bilabiatus; *labio inferiore* trifido, laciniis acutis medio productiore; *labio superiore* latiore integro obtuso. *Corollæ vexil lum* d surgens, alis carinaque brevius, alæ oblongæ carinæ longitudine; *carina* o b ong, recta, acuta. *Stamina* diadelphia; *antheris* 5 oblongo-linearibus, 5 ovatis hirsutis. *Legumen* oblongum, torosum, bivalve, septis cellulosis. *Semina* subrotunda, *hilo* lineari circulariter cincta.—Herbæ *aut* frutices *longe scandentes.* Folia *pinnato-trifoliolata.* Racemi *axillares, fructiferi sæpius penduli.* Legumina *sæpius hispida, pilis innumeris fragilissimis cutem facile penetrantibus et ideo urentibus. De Cand.*

Mucuna (§ Stizolobium) *prurita;* perennis, ramis pubescentibus v. parce hirsutis, foliolis ovatis supra glabris subtus pilis raris sericeis adspersis, racemis densis folio brevioribus longe pedunculatis nutantibus, calyce ad medium bilabiato adpresse pilosis labii inferioris laciniis lato-lanceolatis, leguminibus curvatis pilis rigidis prurientibus vestitis, valvis medio non carinatis. *Wight et Arn.*

Mucuna prurita. *Hook. Bot. Misc. v.* 2. *p.* 348. *Suppl. t.* 13. (M. pruriens, *Wight.*) *Wight et Arn. Prodr. Fl. Penins. Ind. Or. p.* 255.

Mucuna pruriens. *Wall. Cat. n.* 5616. *Wight. Cat. n.* 755.

Carpopogon pruriens. *Roxb. Fl. Ind. p.* 383 (*excl. syn. Linn.*).

Cacara pruritus. *Rumph. Amb.* 6. *p.* 393. *t.* 142.

Nai Corana. *Rheede, Malab.* 8. *p.* 61. *t.* 65.

There is something very peculiar in the great thyrsiform drooping racemes, with large blackish-purple flowers, hanging at the extremity of the long peduncles from the branches of this extensive climber, as seen in the stove of the Palm-house at Kew during the summer months, and looking like bunches of large black grapes. This is one of the species of *Cowage* or *Cow-itch*, of which two are considered to yield the substance known under that name, celebrated as an anthelmintic, viz. the present,

a native of the East Indies, and *M. pruriens*, derived from the West Indies. The two were for a long time confounded. De Candolle threw some doubt upon their identity, and Dr. Wight and ourselves, in the Bot. Misc. l. c., pointed out the difference. *M. pruriens* is figured by Dr. Lindley in the Bot. Reg. 1838. tab. 18. The seeds of our plant were brought by Dr. Hooker from India. As we had not the opportunity of seeing the flowers and fruit in perfection, we copy Dr. Wight's description from the Bot. Misc. It seems a common species in most parts of India, especially about Madras.

Descr. *Stems* suffruticose, twining, branched; *branches* rounded, hairy. *Petioles* much enlarged at the base, six to eight inches long, cylindrical, hairy. *Leaves* ternate (trifoliolate), middle *leaflet* rhomboideo-elliptical, obtuse (scanty in our plant), mucronate; *lateral ones* much dilated on the outside, and also mucronate, on short, thick, rusty, tomentose *stalks*; above, nearly glabrous; below, silvery, from short appressed white hairs; the veins very prominent beneath. *Stipules* filiform-subulate, those of the leaflets much smaller. *Racemes* pedunculated, axillary, pendulous, much shorter than the petioles, thyrsoid. *Flowers* large, dark purple. *Pedicels* in threes, short, arising from a small thick tubercle. *Calyx* pubescent, two-lipped; upper lip entire, obtuse; under one three-cleft, the lobes acute. *Corolla: vexillum* not half the length of the keel, varying in colour from dirty white to pale (or deep) purple; *wings* rather shorter than the keel, dark purple; *keel* cylindrical to near the end, where it suddenly curves upwards and terminates in a sharp spinous point. *Stamens* diadelphous; *anthers* alternately linear and globular. *Pistil: germen* short, hairy; *style* filiform, pubescent for its whole length; *stigma* subcapitate. *Legume* three to four inches long, and bent at the extremities, three-quarters of an inch to an inch, or very nearly so, broad, slightly compressed on the valves, not at all carinated, contracted between the seeds, and hence subtorulose, entirely covered with a thick coating of erect, white, prurient hairs, which usually turn black in drying, and brown in maturity. *Seeds* four or five, oval, not bound by a circular, linear *hilum*, but attached to a large, lateral *funiculus*. *R. Wight.*

Fig. 1. Pistil:—*magnified.*

W Fitch del. et lith.

Tab. 4946.

PELARGONIUM Endlicherianum.

Endlicher's Crane's-bill.

Nat. Ord. Geraniaceæ.—Monadelphia.

Gen. Char. Calyx 5-partitus, lacinia suprema in calcar seu tubulum nectariferum tenuem secus pedunculum decurrentem et huic adnatum. *Petala* 5, rarius 4, plus minus irregularia. *Filamenta* 10, inæqualia, monadelpha, 4–7 tantum fertilia, cetera castrata.—*Species omnes, paucis exceptis, ad* Caput Bonæ Spei ***crescunt.***

Pelargonium *Endlicherianum;* molliter pubescens, rhizomate polycephalo crasso, caulibus simplicibus erectis, foliis radicalibus reniformibus grosse crenatis summis ultra medium quinquefidis, umbella longe pedunculata 3–8-flora, petalorum posticis duobus maximis obovato-cuneatis subtruncatis repando-undulatis roseis venis 5 ramosis purpureis, anticis tribus inæqualibus calyce dimidio brevioribus oblongis integris v. 3–5-fidis, staminibus declinato-adscendentibus glabris basi monadelphis, fertilibus sterilia dimidio superantibus. *Fenzl.*

Pelargonium Endlicherianum. "*Fenzl, Nov. Stirp. Pugill. v.* 1. *p.* 6. *Abbildungen und Beschreibungen Seltn. Pflnzn. t.* 3. *Atlas zu Russeger's Reise, Hft.* 2. *t.* 3." *Walp. Repert. Bot. v.* 2. *p.* 820. *Walp. Ann. Bot. v.* 1. *p.* 141.

The genus *Pelargonium* was rightly separated by L'Héritier from *Geranium;* and the numerous species were long believed to be peculiar, not only to the southern hemisphere, but to the Cape Colony. Of late years however South Australia and the South-Sea Islands have yielded a few species; and more recently still the western Taurus has afforded the very handsome species here represented. I regret that I have not access to Fenzl's works, where this plate is figured and described, nor to the travels of Russeger, where a figure is also quoted; so that I am unable to take advantage of any information given there, beyond the specific character copied into Walpers. We received seeds from the Botanic Garden of Copenhagen, from which plants were raised, that flowered in a cool greenhouse in July, 1856.

Descr. *Rootstock* "large." *Stems* several from the same root, erect, simple, terete, herbaceous, soft with fine down, which invests all the plant, petals excepted, slightly swollen at the joints.

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Leaves few, *radical* ones upon long stalks, *cauline* ones on shorter stalks, all of them cordate, plicate, with a deep sinus, obscurely five-lobed, lobes duplicato-crenate. *Stipules* subtriangular, brown, membranous. *Peduncles* long, terminal, stout. *Umbel* terminal, of many, large, deep rose-coloured *flowers*. *Pedicels* decurved in bud, erect in flower, about one and a half inch long, thickened upwards by the decurrent nectary. *Calyx* of five, spreading, lanceolate *sepals*. Two of the five *petals* are very large, erect, obcordate, waved, marked with five, branched, deep-purple nerves: three lower *petals* extremely minute, smaller than the sepals, oblong, obtuse, unguiculate, erect. *Stamens* standing forward, ten, unequal: *filaments* long, purple, monadelphous at the base. *Ovary* five-lobed, oblong, hirsute. *Style* as long as the stamens, glabrous. *Stigmas* five, linear.

Fig. 1. Petals and pistil:—*magnified*.

At Tab. 4918, we have stated that our *Aristolochia Thwaitesii* is a native of Ceylon; but our excellent friend Mr. Thwaites says that there is some error in this; and we have reason to believe that the label attached belonged to some other plant:—we think the plant is possibly of Chinese origin. We have never, however, seen it but in a state of cultivation, and have no certain clue to its native country.

1917.

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Bel. et nrn.

Tab. 4947.

MORICANDIA Ramburii.

Rambur's Moricandia.

Nat. Ord. Cruciferæ.—Tetradynamia Siliquosa.

Gen. Char. Calyx tetraphyllus, clausus, foliolis lateralibus basi saccatis. *Corollæ petala* 4, hypogyna, indivisa. *Stamina* 6, hypogyna, tetradynama, libera, edentula. *Siliqua* bivalvis, elongato-linearis, compressa vel compresso-tetragona, valvis planis vel carinatis, septo membranaceo, *stylo* compresso, aspermo vel rarius monospermo. *Semina* plurima, ovata, pendula, biseriata, immarginata, lævia. *Embryonis* exalbuminosi *cotyledones* canaliculato-complicatæ, radiculam adscendentem includentes.—Herbæ *in Europa et Africa Mediterranea indigenæ, annuæ vel biennes, aut basi suffruticosa perennes, glabræ, plerumque subglaucæ;* caulibus *erectis, teretibus, ramosis, albicantibus;* foliis *crassiusculis, integerrimis, sinuato-dentatis vel multifidis;* racemis *terminalibus, laxis, aphyllis,* pedicellis *filiformibus, fructiferis strictis;* floribus *majusculis, purpurascentibus. Endl.*

Moricandia *Ramburii;* foliis subcarnosis glabris, radicalibus late ovatis obtusissime sinuato-dentatis, caulinis cordato-amplexicaulibus, calyce valde bisaccato, sepalis exterioribus in mucronem attenuatis interiora superantibus. siliquis longissimis, valvis multinerviis, seminibus uniserialibus compressis anguste marginatis. *Boiss.*

Moricandia Ramburii. *Webb, It. Hisp. p.* 73.

Brassica moricandioides. *Boiss. El. n.* 12. *Voy. Bot. en Espagne, p.* 34. *t.* 8.

A pretty, hardy, perennial, Spanish plant, found in the mountains of Granada, at an elevation of two to three thousand feet above the sea-level, generally in clefts of rocks, by Messrs. Webb and Rambur, and Boissier. Mr. Webb refers the plant to *Moricandia*, Boissier to *Brassica*, for he combines this latter genus of Linnæus, together with *Moricandia, Diplotaxis*, and *Eruca*, of De Cand., and *Erucastrum*, Spenn., all into one. Both our authors allude to the close affinity of our plant with *Moricandia arvensis*, L., from which at first sight it can scarcely be distinguished, though truly distinct in its larger and more pointed leaves, larger flowers, in the deeply bisaccate calyx and the form of the exterior sepals, in the longer and larger pods, and especially in the uniseriate seeds, twice as large as those of *M. arvensis*.

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Descr. *Stem* one to two feet high, branched, suffruticose below. *Leaves* large, glaucous green; lower ones the largest, broadly obovate, petiolate, *cauline* ones gradually smaller and sessile, while the upper ones are small and cordato-amplexicaul; all with a rather acute apex or point. *Racemes* terminal on the branches, many-flowered; *pedicels* slender. *Calyx* with the *sepals* erect; two opposite ones deeply bisaccate; the other two opposite ones longer, and tapering into a subulate mucronate point. *Stamens* six, tetradynamous. *Ovary* elongated, linear. *Style* short. *Stigma* capitate, decurrent on two opposite sides. "*Siliquæ* three to four inches long. *Seeds* uniserial, compressed, with a narrow margin, and emarginate at the apex."

Fig. 1. Flower, from which the petals are removed. 2. Stamens and pistil. 3. Very young silique:—*magnified.*

Tab. 4948.

GALIPEA macrophylla.

Large-leaved Galipea.

Nat. Ord. Rutaceæ.—Pentandria Monogynia.

Gen. Char. *Calyx* brevis, 5-dentatus. *Petala* 5, in corollam hypocrateriformem coalitis, seu valde approximata, tubo brevi pentagono, lobis patentibus acutis. *Stamina* 4–7, hypogyna, petalis subadhærentia, inæqualia, interdum omnia fertilia, sæpius 2 majora antherifera, 2–5 breviora sterilia. *Nectarium* cupuliforme. *Styli* 5 in unicum mox coalita et *stigma* 4–5-sulcum constituentes. *Carpella* 5 aut abortu pauciora, biovulata, obtusa, cocculiformia, sessilia, endocarpio separabili. *Semina* abortu solitaria. *Cotyledones* magnæ, corrugatæ, biauriculatæ.—Frutices *glabri*. Folia *alterna, simplicia aut plurifoliolata;* foliolis *oblongis, acuminatis.* Pedunculi *axillares, multiflori. De Cand.*

Galipea *macrophylla;* foliis simplicibus ovali-oblongis petiolatis basi rotundatis subtus glandulis nigris opacis punctulatis, trunco simplici tenui, florum racemis erectis, staminibus 7, fertilibus 2.

Galipea macrophylla. *St. Hil. MSS. De Cand. Prodr. v.* 1. *p.* 731.

Conchocarpus macrophyllus. *Mikan, Del. Fl. Bras. v.* 1. *t.* 1, 2. *Nees et Mart. Nov. Act. Bonn. v.* 11. *p.* 160. *t.* 18. *f.* 5.

Raputia conchocarpus. *Schult. Mant. v.* 1. *p.* 126.

Sciuris simplicifolia. *Spreng. Syst. Veget. v.* 1. *p.* 39.

Obentonia castrata. *Velloz. Fl. Flum. v.* 1. *t.* 46.

Erythrochiton macrophyllum. *Makoy, Cat.*

A Brazilian stove-plant, received from Mr. Makoy under the name of *Erythrochiton* macrophyllum*. No doubt it is very closely allied to that genus, nevertheless it differs in several important particulars, and we see no reason for separating it from *Galipea*, where De Candolle has placed it. It has, however,

* Dr. Planchon (*Ann. Sc. Nat. ser. III. t.* 19. p. 76) justly observes:—"On a jusqu'ici décrit les fleurs de *l'Erythrochiton brasiliensis* comme pourvues de cinq étamines égales et fertiles. Ce caractère n'est pas constante, en effet, sur deux exemplaires. . . . Nous avons vu tantôt cinq étamines fertiles, tantôt quatre seulement, la cinquième transformée en une longue languette." We have now before us a flower of the plant without one fertile stamen: there are four sterile short filaments, and one extended into a long sterile "languette."

November 1st 1856.

borne no less than six different generic names; and we cannot but think the *Naudinia* of Planchon, in the volume of 'Annales' referred to in the foot-note below (p. 79), too nearly allied to this.

Descr. *Stem* in our plant scarcely a foot high, erect, simple, rather slender, bearing several long-petioled, simple *leaves* (or rather unifoliolate compound leaves): these *leaflets* are elliptic or elliptic-oblong, three to ten or twelve inches long, obtuse, subcoriaceous, very obtuse or rotundate at the base, glabrous, penninerved, beneath dotted with very minute brown dots; *petiole* long, terete, swollen at the very base, and again at the apex, when the leaf or leaflet is jointed on the petiole. *Peduncle* lateral, supraaxillary, longer than the leaves, bearing an interrupted *spike* or *raceme* of pale rose-coloured or white *flowers*. *Flowers* two or three from the same point, on very short pedicels, with a leafy *bractea* at their base. *Calyx* small, tubular-cup-shaped, with five obscure teeth. *Petals* five, united by their claws into a subhypocrateriform corolla; the *tube* straight; *limb* oblique, of five, linear-oblong, spreading segments. *Stamens*, two perfect, included: *anthers* large, oblong-sagittate; three elongated, much exserted, fleshy *sterile filaments* range with the two fertile ones, and two rather smaller ones have their origin higher up in the tube. *Ovaries* five, enclosed in an hypogynous toothed cup. *Styles* combined into one. *Stigma* capitate.

Fig. 1. Stamens. 2. Pistil and hypogynous cup:—*magnified*.

W Fitch del et lith

Vincent Brooks Imp

Tab. 4949.

HYPERICUM OBLONGIFOLIUM.

Oblong-leaved St. John's-wort.

Nat. Ord. Hypericineæ.—Polyadelphia.

Gen. Char. *Calyx* pentaphyllus vel quinquepartitus, laciniis imbricatis æqualibus vel duabus exterioribus majoribus. *Corollæ petala* 5, hypogyna, calycis foliolis æqualia, æquilatera vel plus minus inæquilatera, æstivatione imbricato-convoluta. *Stamina* plurima, hypogyna, in phalanges 3 vel 5 collecta aut irregulariter polyadelpha, rarius libera, rarissime definita; *filamenta* filiformia; *antheræ* introrsæ, biloculares, didymæ, longitudinaliter dehiscentes. *Ovarium* sessile, nunc uniloculare, placentis ad suturas tribus vel quinque parietalibus, vel in introflexis carpidiorum marginibus porrectis, nunc 3–5-loculare, marginibus introflexis ad axim revolutis plus vel minus coalitis. *Ovula* plurima, rarissime subdefinita, bi-pluriseriata, horizontalia, anatropa. *Styli* 3 vel 5, filiformes, liberi vel basi plus minus coaliti; *stigmata* capitata. *Capsula* 1–3–5-locularis, rarissime indehiscens, subbaccata, alias septicide 3–5-valvis, placentis suturalibus valvarum marginibus adhærentibus vel solutis, vel centralibus in columnam indivisam vel partibilem coalitis. *Semina* in loculis plurima, rarissime pauca, vel abortu solitaria, cylindrico-oblonga, recta vel incurva; *testa* crustacea, scrobiculata, nucleum arcte vestiens, vel laxa, reticulato-cellulosa, nucleum multo minorem includens, *endopleuræ* membranaccæ strato interiore subcornoso. *Embryo* exalbuminosus, orthotropus, cylindricus; *cotyledonibus* brevibus, obtusis, *radicula* umbilico proxima.—Herbæ *vel* suffrutices, *in regionibus temperatis et calidioribus totius orbis, maximo numero in temperatis calidioribus hemisphæræ borealis crescentes;* foliis *oppositis, petiolatis, sessilibus vel amplexicaulibus, integerrimis vel interdum subserrulatis, sæpissime pellucido-punctatis,* stipulis *nullis;* floribus *solitariis, cymosis, corymbosis,* ***paniculatis vel rarius umbellatis, flavis. Endl.***

Hypericum (§ Ascyria) *oblongifolium;* fruticosum, ramosum, ramis teretibus, foliis sessilibus ovatis seu oblongo-ovatis obtusis minute pellucido-punctatis subtus glaucis, corymbis amplis di-trichotome divisis multifloris foliosis (foliis parvis), calycis sepalis basi coalitis obovatis concavis subinæqualibus denticulatis, petalis maguis inæquilateris subrotundatis hinc margine denticulatis, staminibus numerosissimis pentadelphis, stylis 5 liberis apice recurvatis.

Hypericum oblongifolium. *Choisy, Prodr. Hyper. p.* 42. *t.* 4. *Wall. Plant. Rar. Asiat. v.* 3. *t.* 244. *De Cand. Prodr. v.* 1. *p.* 545.

A truly lovely hardy shrub, with evergreen foliage, and large handsome yellow blossoms; a native of northern India, Nepal,

and the Himalayas, at elevations of from 6–12,000 feet. Mr. William Lobb found it on hills about Mufflong, Assam, and introduced it to the nursery of Messrs. Veitch and Son at Exeter and Chelsea. We think that so ornamental a plant will soon find its way into every garden and every shrubbery. Neither of the two figures we have quoted does justice to the beauty of this plant.

Descr. A small, rather compact *shrub*, with red-brown terete woody branches. *Leaves*, among the largest of the genus, two to four inches long, evergreen, exactly ovate or approaching to oblong, sessile, obtuse, minutely pellucido-punctate, penninerved, dark green above, pale and glaucous beneath, and dotted, even when not held between the eye and the light. *Corymbs* large, terminal on the branches, bearing copious, large and rich, almost golden-yellow flowers; the *branches* of the panicle are di- or trichotomous, leafy, but the leaves gradually smaller and subbracteiform as they approach the flowers, all opposite. *Calyx* of five large, lax, obovate, concave *sepals*, united at their base, the somewhat membranous margin denticulate. *Petals* very large, subrotund, but more or less obliquely cuneate and inæquilateral, imbricated, concave, rather firm, the margin more or less entire or denticulate. *Stamens* very numerous, collected into five *phalanges* or *bundles*, each set united at their base: *filaments* slender, yellow: *anthers* orange-yellow, small, subglobose. *Ovary* broad-ovate, tapering upwards, and terminating in five *styles*, which are recurved at the apex. *Stigma* obtuse, downy.

Fig. 1. Calyx and pistil. 2. One of the five bundles of stamens:—*magnified.*

5.

3.

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W.Fitch del.et lith

Vincent Brooks Imp

Tab. 4950.

AGAVE striata.

Striated-leaved Agave.

Nat. Ord. Amaryllideæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4934.)

Agave *striata ;* acaulis, foliis patentibus rectiusculis numerosissimis rigido-carnosis elongatis linearibus sensim attenuatis (transverse sectis subrhombeo-ancipitibus) subglaucis superne longitudinaliter pluristriatis margine scabris apice spinescente, scapo centrali elongato foliis duplo triplove longiore bracteato bracteis patentibus, spica longissima densiflora, floribus geminatis sessilibus, bracteis e lata basi longe subulatis, capsulis subbaccatis brevi-ovatis obtuse triquetris nigris.

Agave striata. *Zucc. in Nov. Act. Acad. Leopold. Carol.* 16. 2. *p.* 678. *Salm-Dyck, Hort.* 1814. *p.* 307. "*Roem. Am.* 286."

There can be no question that this plant, which we have received from Real del Monte, Mexico, is nearly allied to *Agave geminiflora*, Gawl. (see Bot. Reg. t. 1145), but the foliage is different in the form (as best seen by a transverse section), and the two are quite distinct. Three species of this group of *Agave*, with very narrow linear but gradually attenuated leaves, are described by authors; viz. *Agave geminiflora*, Gawl. (too long known in our gardens under the false name of *Bonapartea juncea*); *A. striata*, Zucc., which we believe to be the species here figured; and *A. recurva*, Zucc. The two last appear to be hitherto unknown in the flowering state. Of the first, *A. geminiflora*, I would observe that this is described as having the leaves filamentous at their margins, although no figure, that we have seen, gives that appearance (I have no access to "Tagliabue, in Bibliotheca Ital. i. t. 100"). Dr. Lindley describes them "marginibus *per ætatem* filamentosis." The oldest plant however, under the name of *A. geminiflora*, in our gardens, shows no appearance whatever of filaments: but, on the other hand, we have lately received a

young plant under the name of "*A. geminiflora*, filamentosa," quite remarkable for its copious filaments: so that it is probable the plant of English gardens, at least, is not the true *geminiflora*, or else the plant varies remarkably in the absence or presence of these filaments. From the two species to which I have now alluded, our plant may be recognized by the foliage alone: in them the leaves are, comparatively, soft and flaccid; there are no striæ, there is no scabrous margin, and the surface is dark green, minutely dotted with a pale, closely adherent scurf, only visible under a lens. Our *A. striata* has flowered during the present year, for the first time.

Descr. Stemless or nearly so. *Leaves* very numerous, from a short *trunk* or *caudex*, which is entirely clothed by them, two to two and a half feet long, from a broad base, linear, very rigid, tapering gradually to the apex, which is terminated by a horny brown point, extremely pungent. In substance the leaf is thick; a transverse section gives a compressed rhomboid figure, within spongy, but full of fibre; externally the surface is glaucous-green, marked with rather closely placed, parallel lines; the margin is rough, with a very narrow cartilaginous edge, which is minutely serrated. The younger and central leaves are erect, the lowest ones recurved, the intermediate ones horizontally patent, but with a slight recurvation. *Scape* arising from the centre of the foliage, rather stout, four to six feet long, terminated by a long *spike*, of densely compacted *flowers*, imbricated in the bud and elongating as the flowers expand, so that the apex attains a height of ten to twelve feet from the ground. The scape, below the spike, has numerous, spreading, long, filiform or subulate scales, two to three inches long; these are flowerless *bracts*: the same, but smaller and green, subtend the flowers. These latter are in pairs, sessile; green externally, yellowish-green within. *Perianth* infundibuliform. The six segments ovate, moderately spreading. *Filaments* of the *stamen* stout, almost thrice as long as the corolla. *Anthers* large, linear, dark purple. *Ovary*, combined with the perianth, obscurely three-angled. *Style* thick, as long as the filaments. *Stigma* obscurely three-lobed, downy. *Capsule* subbaccate, short ovate, black, terminated by the withered perianth, obtusely trigonous, three-celled: *cells* with many very glossy black seeds.

Fig. 1. Entire plant, on a very reduced scale. 2. Apex of a leaf: —*nat. size*. 3. Transverse section of a leaf:—*magnified*. 4. Portion of a rachis of the spike with flowers:—*nat. size*. 5. Section of the ovary:—*magnified*.

W Fitch del et lith

Vincent Brooks Imp

Tab. 4951.

PACHYPHYTUM BRACTEOSUM.

Bracteated Pachyphytum.

Nat. Ord. Crassulaceæ.—Decandria Pentagynia.

Gen. Char. Pachyphytum, *Kl.*—*Calyx* campanulatus, quinquepartitus, laciniis inæqualibus, filiformibus, corollam superantibus. *Corolla* perigyna, quinquepartita, hypocraterimorpha, *limbi* lobis patentissimis, in fauce ad marginem dilatato-involutis, cucullato-bilobis. *Stamina* 10, quorum 5 calyci, 5 petalis imposita, æquilonga, exserta. *Squamulæ* nullæ. *Germina* 5, libera, unilocularia; *ovulis* ad suturam ventralem plurimis. *Capsulæ* folliculares 5, in stylos subulatos attenuatæ, liberæ, intus longitudinaliter dehiscentes, polyspermæ. *Semina* minima, elongato-scobiformia.—Suffrutex *Mexicanus, carnosus, glaucescenti-albidus.* Caulis *brevis, crassus.* Folia *rosulata, magna, obovato-cuneiformia, crassa, carnosa, obtuse apiculata.* Flores *secundi, dense spicati, bracteati;* spica *apice cernua;* bracteis *magnis, crassis, obovatis, brevissime acutis, basi sagittatis, unilateraliter bifariam imbricatis.* Corollæ *limbus coccineus. Kl.*

Pachyphytum *bracteosum.*

Pachyphytum bracteosum. *Klotzsch in Otto et Dietr. Allgemeine Gartenzeitung, 9ter Jahrgang, p.* 9. *Klotzsch in Ic. Plant. Rar. Hort. Berol. p.* 107. *t.* 43.

This is a solitary species of a new genus, an inhabitant of Mexico, allied to *Echeveria*, but sufficiently distinct both in habit and in the structure of the flowers, and very remarkable in the curved, secund, bracteated spikes of flowers, in the large campanulate calyx, much exceeding the corolla in length, in the two spurs at the base of the leaves, of the peduncle, and of the bracteas, and in the two scales or ears at the base of the lamina of the petals. There is a most striking contrast between the colour of these petals and the pale glaucous hue of the large calyx and bracts, and all the rest of the plant; and the flowers are more readily brought into view by the curvature of the spikes. The plant only requires the protection of a temperate greenhouse. It flowers in the summer months, and the spike becomes erect after flowering.

Descr. A suffruticose, very succulent *plant*: the rather short

and thick *stem* scarred below with the fallen leaves, and, as well as the rest of the plant, singularly glaucous. *Leaves* large, thick, fleshy, spreading, clothing the upper part of the stem, rosulate, obovate, obtuse or with only an obtuse point, slightly concave above, convex beneath, the base, where set upon the stem, dilated: the scars formed by the fallen leaves, orbicular. *Peduncles* lateral, from among the leaves, erect, a foot or more long, sparingly leafy: its *bracteal-leaves* oblong or tongue-shaped, subsemiamplexicaul, often tinged with red, the base on each side prolonged into a spur. *Spike* four to six inches or more long, singularly drooping in flower, eventually erect. *Flowers* secund, large, subtended by large imbricating cordate bracteas, but in the opposite direction to the bracts: these *bracteas* are also bicalcarate at the base. *Pedicels* very short, thick. *Calyx* ample, almost an inch long, campanulate, deeply cut into five, ovate-oblong, glaucous, fleshy, subfoliaceous unequal segments. *Petals* five, erectopatent, oblong, acuminate: at the summit of the broad claw are two obtuse, conspicuous auricles. *Limb* of the corolla red. *Stamens:* five free, alternating with the petals; five smaller ones, with short filaments, adnate with the petals. *Anthers* ovate. *Ovaries* five, oblong, with a fleshy disc at their base. *Styles* short, subulate. *Stigmas* capitate.

Fig. 1. Flower from which the calyx is removed. 2. Petal and two stamens: —*magnified*.

W.Fitch del.et lith.

Vincent Brooks Imp.

Tab. 4952.

LEPERIZA latifolia.

Broad-leaved Leperiza.

Nat. Ord. Amaryllideæ.—Hexandria Monogynia.

Gen. Char. Perigonium superum, corollaceum, rectum, e *tubo* cylindraceo brevi stricto campanulatum, 6-fidum, deciduum; *laciniis* ovatis, acutiusculis, subæqualibus, erectis. *Corona faucialis* tubulosa, abbreviata, 6-dentata, inclusa, inter dentes staminifera. *Stamina* subæqualia, erecta, exserta. *Antheræ* oblongæ, dorso medio affixæ, incumbentes. *Ovarium* inferum, abbreviato-ovatum, tricoccum. *Columna stylina* erecta, stamina superans, filiformis. *Stigma* parvum, obsolete trigonum. *Semina* plurima, parva, oblongo-subrotunda.—Herba *Americana, bulbifera, scapigera:* bulbo *tunicato.* Folia *coætanea (æstivalia), petiolata, oblonga, acuta, striato-nervosa, nitida.* Scapus *erectus, teres, umbellato-multiflorus.* Spatha *polyphylla;* foliolis *sublanceolatis, marcescentibus.* Flores *pedicellati, penduli. Kth.*

Leperiza *latifolia.*

Leperiza latifolia. *Herb. App. p.* 41. *Ej. Amaryll. p.* 195. *Kth. Enum. Plant. v.* 5. *p.* 643.

Chrysiphiala latifolia. *Lindl. in Schult. Syst. v.* 7. *p.* 906.

Pancratium latifolium. *Ruiz et Pav. Fl. Perur. v.* 3. *p.* 54. *t.* 284.

An ornamental South American bulbiferous plant, native of moist, shady, woody places, in the Province of Tarma, Andes of Peru: detected by Ruiz and Pavon, and described by them under the name of *Pancratium latifolium*, in their 'Flora Peruviana;' and of which bulbs were sent to us by our friend John McLean, Esq., late of Lima. Dr. Lindley suggested that it should be united with *Chrysiphiala;* but the learned author of the '*Amaryllidaceæ*' has constituted of it the genus *Leperiza*, of which it forms the sole species. The plant is kept in an ordinary greenhouse, where it blossoms in September.

Descr. *Bulb* moderately large, tunicated, externally brown and striated, somewhat scaly at the top, from whence the leaves (two to four) appear: these are on rather long, broad, channelled *petioles;* the *blade* is broad-oval or elliptical, acute, striated, submembranaceous, glabrous, almost a span long, four to four and

a half inches wide. *Scape* about a foot high, terete, bearing an *umbel* of six to eight drooping *flowers* from the dilated apex of the scape. *Spathe* of a few, membranaceous, lanceolate, scariose *leaflets*, two inches or more long. *Pedicels* about as long as the spathe, curved in flower, nearly erect in fruit. *Flowers* pendent, two and a half inches long, including the ovary. *Perianth* infundibuliform, yellow, partially tinged with dull orange, green at the apices: *tube* about equal in length with limb: *segments* of the limb erect. *Corona* simply consisting of six, short, erect, rounded teeth at the apex of the tube, between which the *stamens* are placed. *Filaments* erect, longer than the limb of the perianth, consequently exserted. *Anthers* oblong, versatile. *Ovary* inferior, globoso-trilobed, dark green. *Style* longer than the stamens, straight; *stigma* of three minute lobes.

Fig. 1. Flower with the perianth laid open, showing the corona and insertion of the stamens. 2. Pistil:—*magnified.*

W. Fitch del. et lith.

Vincent Brooks Imp

Tab. 4953.

CASTANEA CHRYSOPHYLLA.

Golden-leaved Chestnut.

Nat. Ord. Cupuliferæ.—Monœcia Octandria.

Gen. Char. Flores monoici v. rarissime hermaphroditi. Masc. indefinite glomerati, raches axillares circumsedentes, rarius solitarii, bracteolati. *Perigonium* calycinum profunde 5–6-partitum. *Stamina* 8–15, basi perigonii circa discum glandulosum inserta; *filamenta* filiformia, elongata, simplicia; *antheræ* 2-loculares, incumbentes, *loculis* oppositis. Fœm. et Hermaphr. *Gemmæ* axillares, subsolitariæ, bracteis plurimis linearibus, inæqualibus, cum involucro campanulato 1–3-floro connatis. *Perigonii limbus* superus, 5–8-fidus. *Stamina* 5–12, sæpissime abortiva, minima. *Ovarium* inferum, 3–6-loculare. *Ovula* in loculis solitaria, ex apice anguli centralis pendula, anatropa. *Stylus* brevissimus, crassus: *stigmata* loculorum numero, setiformia, patentia. *Fructus* capsuliformis, involucro coriaceo echinato, nuculis duabus, tribus v. unica fœto. *Nuculæ* ovato-trigonæ v. subangulatæ, monospermæ; *epicarpio* coriaceo, endocarpio fibroso. *Semen* pendulum; *testa* membranacea, plicis intra nuclei rimas sese insinuans. *Embryo* exalbuminosus, orthotropus; *cotyledonibus* maximis crassis farinaceis, sæpe inæqualibus, plicatis, arcte cohærentibus; *radicula* immersa supera.—Arbores *v.* arbusculæ *elegantes, in Europa australi, Asia media, in America boreali et in excelsis Archipelagi Moluccani montibus indigenæ;* foliis *alternis integerrimis v. serratis,* floribus ***coætaneis.*** ***Endl.***

Castanea *chrysophylla;* foliis sempervirentibus oblongo-ovatis acuminatis coriaceis integerrimis glabris subtus aureo-farinosis.

Castanea chrysophylla. *Dougl. in Hook. Fl. Bor. Am. v. 2. p.* 159. *Hook. in Lond. Journ. of Bot. v.* 2 (1843), *p.* 496.

One of the greatest rarities perhaps in the Arboretum of the Royal Gardens of Kew, is the subject of the present Plate,—a Chestnut with the under side of the leaves of a pale golden hue, occasioned by the presence of innumerable minute peltate scales of that colour. Specimens of the plant probably exist in the herbaria of many botanists; for the tree was discovered so long ago as 1830, by Mr. David Douglas, about the grand rapids of the Columbia (Oregon), Cape Orford, and near Mount Hood, in North-west America, constantly inhabiting the hills; and it has since been found by travellers in California, especially by Burke and Hartweg, and these collectors were able to send seeds to

Europe, of which very few indeed appear to have germinated. Our solitary plant was reared from a seed gathered by Burke: and, although now only about five feet high, it has for several years produced spikes of flowers, and these, in one instance, were succeeded the following year (1856) by several fruits of the size here represented, but which fell off before they were mature. The tree bears our severest winters perfectly unharmed.

DESCR. This is said by Douglas to form a beautiful tree in its native country, varying in height from twenty to seventy feet. We make our description from our own small plant above mentioned, which is branched almost to the base, the young *branches* tawny or golden-colour. *Leaves*, the smallest of the Chestnut-kind, two and a half to three inches long, shortly petiolate, ovato-oblong, acuminate, coriaceous, entire, glabrous, very dark green and somewhat glossy above; beneath clothed with dense, minute, farinaceous scales of a golden-yellow colour. *Spikes* of *flowers* from the axils of the upper or terminal leaves, as long as, or shorter than, the leaves, on short peduncles. *Male flowers* occupying the upper half, numerous, crowded; *female flowers* one to three or five, distant, scattered at the base, all sessile. MALE FLOWERS:—*Perianth* cup-shaped, small, villous, six-cleft, three lobes external; three inner less villous than the outer ones. *Stamens* ten to twelve or thirteen: *filaments* long, flexuous, much longer than the perianth. FEMALE FLOWERS, accompanied by some imperfect stamens. *Perianth* as in the male. *Ovary* having its base incorporated with the perianth, very hispid, dividing above into three glabrous *styles*. These ovaries remained the whole winter on the plant; and during the following summer became a three-lobed *fruit* of the size represented at fig. 5, and then fell off immature before the autumn. It is three-lobed, and very prickly, as in *Castanea vesca*.

Fig. 1. Female flower. 2. Pistil removed from the perianth. 3. Male flower. 4. Stamen and inner lobe of the perianth:—*magnified*. 5. Immature fruit:—*nat. size*. 6. Scale, and portion of another scale, constituting the golden farinaceous substance on the under side of the leaves:—*magnified*.

1854

W.H. del. et lith.

Vincent Brooks

Tab. 4954.

SINNINGIA Youngiana.

Dr. Young's Sinningia.

Nat. Ord. Gesneriaceæ.—Didynamia Angiospermia.

Sinningia, *Nees ab Esenb.—Gen. Char. emend. Calyx* campanulatus, plerumque 5-alatus. *Corollæ* tubus subtus dorsoque varie gibbus vel inflatus. *Stigma* stomatomorphum.—Suffrutices Americæ tropicæ, rhizomate *tuberoso, perennes. Hanstein in Linnæa, v. 26. p. 204.*

Ligeria, *Dcne.—Gen. Char. emend. Calyx* patulus, exalatus. *Corollæ* tubus oblique ventricoso-campanulatus (ex basi angustata sursum paullatim ampliatus). *Stigma* stomatomorphum.—Herbæ Americæ tropicæ, rhizomate *tuberoso, perennes. Hanstein in Linnæa, v. 26. p. 204.*

Sinningia (hybrida) *Youngiana;* pubescens, rhizomate tuberoso, caule herbaceo erecto purpurascente, foliis oppositis petiolatis oblongis vel ovato-oblongis acutis margine crenatis supra nitidis viridibus subtus pallidioribus, floribus axillaribus vel terminalibus solitariis amplis, pedunculis petiolo duplo triplove superantibus, calyce 5-alato, laciniis 5 ovatis acuminatis, corollæ (purpureæ vel violaceæ) tubo ex basi angustato sursum paullatim ampliato, limbo 5-fido, lobis subæqualibus rotundatis patentibus, staminibus inclusis, antheris connexis, ovario glandulas 5 subulatas cingente, stigmate stomatomorpho.

Sinningia Youngiana. *Marnock in Paxton's Magazine of Botany, v. 7. p. 51. cum icon.*

Sinningia violacea. *Hortor.*

Gloxinia violacea. *Pope. Steudel, Nomencl. Bot. ed. 2. p. 690?*

If we were to adopt the strictly scientific nomenclature proposed by Dr. Klotzsch, and approved of by various Continental botanists of eminence, we should be obliged to confer upon this plant the name of *Sinningia Ligeria velutina speciosa*, so as to show that it is a hybrid between *Sinningia velutina*, Nees ab Esenb., ♀, and *Ligeria speciosa*, Dcne. (Gloxinia speciosa, *Lodd.*) ♂; but as such a name, however well answering the purposes of science, would never become popular, or could never be adopted in our gardens without causing considerable inconvenience, we have retained the older, though less expressive one. *Sinningia Youngiana* was raised some years ago by Mr. Marnock, and named by him in compliment to Dr. Young, Superintendent of

the Botanic Garden at Sheffield. Apart from the claims upon our attention on account of its ornamental blossoms, it is interesting as being a hybrid between the two most typical species of two different genera, having the thick tuberous rhizome and the tube of the corolla of *Ligeria*, and the five-winged calyx of *Sinningia*.

Descr. Pubescent. *Rhizome* tuberous, several inches in diameter. *Stem* herbaceous, erect, purplish, from one foot to eighteen inches high. *Leaves* opposite, petiolated, oblong or ovate, oblong, crenated, green and glossy above, pale, almost whitish, below. *Flowers* axillary or terminal, solitary. *Peduncle* twice or three times the length of the petiole. *Calyx* five-winged, five-lobed; *lobes* ovate, acuminate. *Corolla* with a campanulate *tube*, and five, almost equal, round *lobes*, more or less intensely purple or violet, with the exception of the tube, which is a yellowish-white at the base, and at the throat, which is spotted. *Ovary* surrounded by five subulate *glands*. *Stamens* shorter than the tube of the corolla and the style. *Stigma* two-lipped. *Ovules* sterile. *Berthold Seemann.*

Fig. 1. Ovary, style, and stigma:—*slightly magnified.*

W Fitch del.et lith.

Vincent Brooks Imp

Tab. 4955.

TRICYRTIS pilosa.

Hairy Tricyrtis.

Nat. Ord. Uvularieæ.—Hexandria Trigynia.

Gen. Char. *Calyx* 6-sepalus, corollaceus, regularis, deciduus; *sepala* distincta, oblonga, apice acuminata et cucullato-excavata, campanulato-conniventia; tria exteriora 7-nervia, basi gibboso-saccata; tria interioria 5-nerva. *Stamina* 6, basi sepalorum inserta, æqualia. *Filamenta* subulata, compressa, basi dilatata ac subconnata, glabra. *Antheræ* biloculares, ellipticæ, complanatæ, apice retusæ, basi bilobæ, dorso intus spectante versus medium affixæ, externe secundum longitudinem dehiscentes. *Ovarium* liberum, sessile, elongatum, triquetrum, triloculare, apice in *stylum* brevem attenuatum; *ovula* in loculis creberrima, biseriata, subhorizontalia, anatropa. *Stigmata* 3, apice biloba, recurvata. *Capsula* triquetro-prismatica, trilocularis, apice trivalvis. *Semina* parva, in loculis per simplicem (?) seriem densissime imbricata, ovata, plana, atra; *teste* laxiuscula, rugosa. *Embryo* minutus, in albuminis carnosi cavitate submucosa hilo opposita locatus.—Herbæ *subtiliter pilosa*. Caulis *erectus*, *foliatus*, *apice ramosus et pauciflorus*. Folia *sparsa*, *ovata-oblonga*, *cordata*, *sessilia*, *amplexantia*, *acuminata*, *reticulato-nervosa* (?), *membranacea*. Flores *in ramis solitarii vel gemini*, *longe pedunculati*, *cernui*, *virescente-albi*, *intus maculis crebris purpureis notati*, *inodori*; pedicellis *inarticulatis*. *Kth.*

Tricyrtis *pilosa.*

Tricyrtis pilosa. *Wall. Tent. Fl. Nepal. v.* 2. *p.* 52, *p.* 46. *Roem. et Schult. Syst. Veget. v.* 17. *p.* 1680. *Kunth, Enum. Plant. v.* 4. *p.* 279.

Campsoa maculata. *Don, Prodr. Fl. Nepal.* 51.

Compsanthus maculatus. *Spreng. Syst. Veget. Cura Post.* 137.

Uvularia hirta? *Thunb. Jap.* 36. *Willd. Sp. Pl.* 2. *p.* 137. *Roem. et Schult. Syst. Veget. v.* 7. *p.* 370.

If this is not a plant which strikes the eye from its beauty, it can scarcely fail to do so from the peculiar form and colouring of the flowers. Dr. Wallich, its discoverer, thinks it may be identical with the *Uvularia hirta* of Thunberg; if so, it is a native of Japan as well of Himalaya, in the mountains of Sheopore and Chandagiry, where Dr. Wallich saw it; but it has probably an extensive range in Himalaya, for it is abundant in Sikkim-Himalaya, where Drs. Hooker and Thomson detected it, and whence they sent seeds to the Royal Gardens of Kew. The

figure in the 'Tentamen Floræ Nepalensis' is extremely accurate; but our artist represents two rows or series of ovules in each cell, while Dr. Wallich figures and describes only one: the former we suspect to be the correct number.

Descr. *Root* a small irregular *tuber*, throwing out many branched fibres. *Stems* herbaceous, a foot or more high, branched, terete, pubescent, as in nearly the whole plant, with glandular hairs. *Leaves* alternate, distant, cordato-ovate, shortly acuminate, entire, soft and downy, semiamplexicaul at the base, and there forming a very short *sheath; nerves* obliquely parallel. *Peduncles* in pairs, terminating the stem and branches, one bearing a small leaf or *bractea*, downy. *Flowers* solitary, erect. *Sepals* six, at first erect, and forming a campanulate blossom, then spreading horizontally, of a whitish-green colour, internally spotted or blotched with purple, lanceolate, glabrous within; the three outer with a large sac or gibbous pouch at the base, the three inner ones merely cucullate. *Stamens* inserted opposite to the sepals, erect, but flexuose, glandular at the base. *Anther* oblong, extrorse. *Ovary* prismatic, trigonous, glandular at the top. *Style* simple at the base, soon dividing into three spreading branches, and then again bifid, spotted with purple, and beautifully glanduloso-pilose. *Fruit*, according to Dr. Wallich, a triquetro-prismatic *capsule*, the side channelled, three-valved, the *valves* short, plicate, narrow; the *dissepiments* formed by the inflexed margins of the valves.

Fig. 1. Outer sepal. 2. Inner sepal. 3. Stamen. 4. Pistil. 5. Transverse section of ditto:—*magnified*.

3
7
2

Tab. 4956.

LINUM grandiflorum.

Large-flowered Flax.

Nat. Ord. Lineæ.—Decandria Pentagynia.

Gen. Char. Calyx pentaphyllus, foliolis integris. *Corollæ petala* 5, hypogyna, ima basi coalita, alterna calycis foliolis opposita fertilia, basi biglandulosa, alterna petalis opposita ananthera, dentiformia. *Filamenta* complanato-subulata; *antheræ* introrsæ, biloculares, longitudinaliter dehiscentes. *Ovarium* sessile, 3–5-loculare; *loculis* 2-ovulatis, semisepto dorsali verticaliter incomplete bilocellatis, v. septo dorsali completo 10-loculare, *loculis* 1-ovulatis. *Ovula* pendula, anatropa. *Styli* 3 v. 5, filiformes, liberi vel basi coaliti; *stigmata* capitellata v. linearia. *Capsula* subglobosa, nunc 3–5-locularis, *loculis* septo dorsali verticaliter semi-bilocellatis, apice septicide 3–5-valvis, *valvis* semi-bifidis, loculis dispermis, nunc 10-locularis septicide decacocca, coccis indehiscentibus, monospermis. *Semina* pendula, *testa* coriacea, endopleura carnosa, tumida. *Embryonis* exalbuminosi recti vel subarcuati *radicula* supera.—Herbæ *vel* suffrutices *in temperatis totius orbis crescentes, inter tropicos rari;* foliis *alternis oppositis v. verticillatis, integerrimis;* floribus *paniculatis v. corymbosis, luteis, cæruleis, carneis, v. albis. Endl.*

Linum *grandiflorum;* annuum, e basi ramosum erectiusculum, foliis (ramorum) sparsis remotis ovato-lanceolatis patentibus, floribus laxe paniculatis, sepalis lanceolato-subulatis marginibus setoso-ciliatis, stigmatibus linearibus, petalis calyce plus quam duplo longioribus puniceis.

Linum grandiflorum. *Desf. Fl. Atl. v.* 1. *p.* 277. *t.* 78. *De Cand. Prodr. v.* 1. *p.* 427. *Spreng. Syst. Veget. v.* 1. *p.* 962. *Rœm. et Schult. v.* 6. *p.* 738. *Planch. in Hook. Lond. Journ. of Bot. v.* 7. *p.* 171. *Lindl. et Paxt. Fl. Gard. v.* 1. *p.* 27. *f.* 13 (*woodcut*).

Nothing but a well-coloured figure, which has never hitherto appeared, can give an idea of the beauty of this plant. The plate of Desfontaines does justice to the size of the blossom; that given in the 'Flower Garden' is not so large as one of its petals. The wild state is described as having rose-coloured flowers: ours are, as recorded by Lindley and Paxton, "brilliant crimson." The species inhabits the north of Africa; near Mascar (Desfontaines) and near Oran, according to Mr. Munby in our Herbarium. It has lately been introduced into European

gardens from Algiers; and, though an annual, its beauty will recommend it to more extended cultivation, and it is said to answer well for flower-borders. Our plants were kept in a cool greenhouse, and flowered in August.

Descr. An annual, ten inches to a foot high, much branched, almost from the root. Lowest and youngest *leaves* somewhat crowded and imbricated, the rest distant, patent, ovato-lanceolate, entire, glaucous green. The ultimate branches or peduncles, each terminated by a single flower, form a lax *panicle*. *Flowers* large. *Calyx* with the sepals green, erect, imbricated, lanceolato-subulate, rigid, the margin membranous, ciliated with rather rigid hairs. *Petals* broadly obovate, clawed, minutely crenulated at the edge, of a rich crimson colour, the *claws* streaked with black, and internally with white. *Staminal tube* rather long, cylindrical. *Anthers* large. *Ovary* oval, tapering into a thick style: *stigmas* long, linear, downy.

Fig. 1. Flower deprived of its petals. 2. Staminal tube, including the pistil. 3. Pistil:—*magnified*.

Vincent Brooks Imp.

Tab. 4957.

MELASTOMA DENTICULATUM.

Toothed Melastoma.

Nat. Ord. Melastomaceæ.—Decandria Monogynia.

Gen. Char. Calycis tubus ovatus, sæpius squamis vestitus: *limbus* 5- aut rarius 4–6-fidus, *lobis* deciduis, appendicibus extus inter lobos interdum ut in *Osbeckia* ortis parvis. *Petala* tot quot calycis lobi. *Stamina* sæpius numero petalorum dupla, rarius æquali. *Antheræ* connectivo in aliis elongato, in alternis breviore, basi bicalcarato aut bisetoso. *Stigma*, punctum pruinosum. *Capsula* baccata, 5-locularis (rarius 4–6-locularis). *Semina* cochleata.—Frutices *Asiatici aut Africani, sæpius hispide setosi.* Folia *petiolata, integerrima aut serrulata*, 3–7-*nervia.* Pedunculi *axillares aut terminales.* Flores *ampli, albi rosei aut purei. De Cand.*

Melastoma *denticulatum;* fruticosum, ramulis e compresso teretiusculis petiolisque setis adpressis, scabris foliis petiolatis ovali-oblongis acuminatis 5-nerviis superne setis parvis scabris subtus pallidis secus nervos adpresse strigosis, floribus paucis subcymosis, calycis urceolati adpresse strigosi lobis (ovato-) lanceolatis deciduis. *De Cand.*

Melastoma denticulatum. *Labill. Sert. Caled. p.* 65. *t.* 64. *De Cand. Prodr. v.* 3. *p.* 44. *Naudin, Melast. p.* 160.

An inhabitant of New Caledonia, where it was discovered by Labillardière, during the voyage in search of La Peyrouse, and it was accurately figured and described in the 'Sertum Austro-Caledonicum' of that author. It has been recently introduced into Europe by the botanist of Captain Denham's Surveying Voyage (Mr. Milne), who sent seeds gathered in New Caledonia to the Royal Gardens of Kew, where it flowers freely in July and August. We presume that M. Naudin, author of the learned monograph of *Melastomaceæ*, intends this to be considered a true *Melastoma*, though he places it in a group of "species addendæ; *multæ* autem incertæ:" but Walpers, apparently copying from Naudin, speaks of the species of the section as "*adhuc* incertæ." This species must surely have been well known to M. Naudin, both by the figure of Labillardière and by specimens in the Paris Herbaria.

December 1st, 1856.

Descr. A moderately small *shrub*, a good deal branched, the *branches* subangular and, as well as the *petioles* (from one-half to three-quarters of an inch long), reddish, rough, with appressed setæ. *Leaves* rather large for the size of the plant, handsome, broadly ovate, or ovate-lanceolate (superior ones almost lanceolate), subcoriaceous, acuminate, entire, five-nerved, nerves united by transverse veins, dark green above, pale beneath; on both sides, especially beneath, strigose, with appressed, subulate setæ. *Corymbs* few-flowered (four to six), terminal, leafy, bracteated; *bracts* and *pedicels* reddish. *Calyx* with the *tube* urceolate, clothed with appressed, imbricated, small, fimbriated *scales*: *limb* of five or six, ovato-lanceolate, apiculate, deciduous, fringed or ciliated *lobes*: mouth of the *calyx* with five or six erect teeth or scales. *Petals* nearly white. *Stamens*: *filaments* rather short: *anthers* unequal, opening by a single pore at the apex, wrinkled on one side, bicalcarate or rather bigibbose at the base. *Ovary* below adnate with the tube of the calyx, setose at the apex: *style* about as long as the stamens, inclined and flexuose.

Fig. 1. Portion of a leaf, showing the strigose setæ. 2. Calyx, including the pistil. 3. Two of the stamens. 4. One of the appressed scales of the tube of the calyx:—*magnified.*

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